FOUNDED IN 1856

RAILWAY AGE

THE STANDARD RAILROAD WEEKLY FOR ALMOST A CENTURY

ANNUAL REVIEW AND OUTLOOK NUMBER

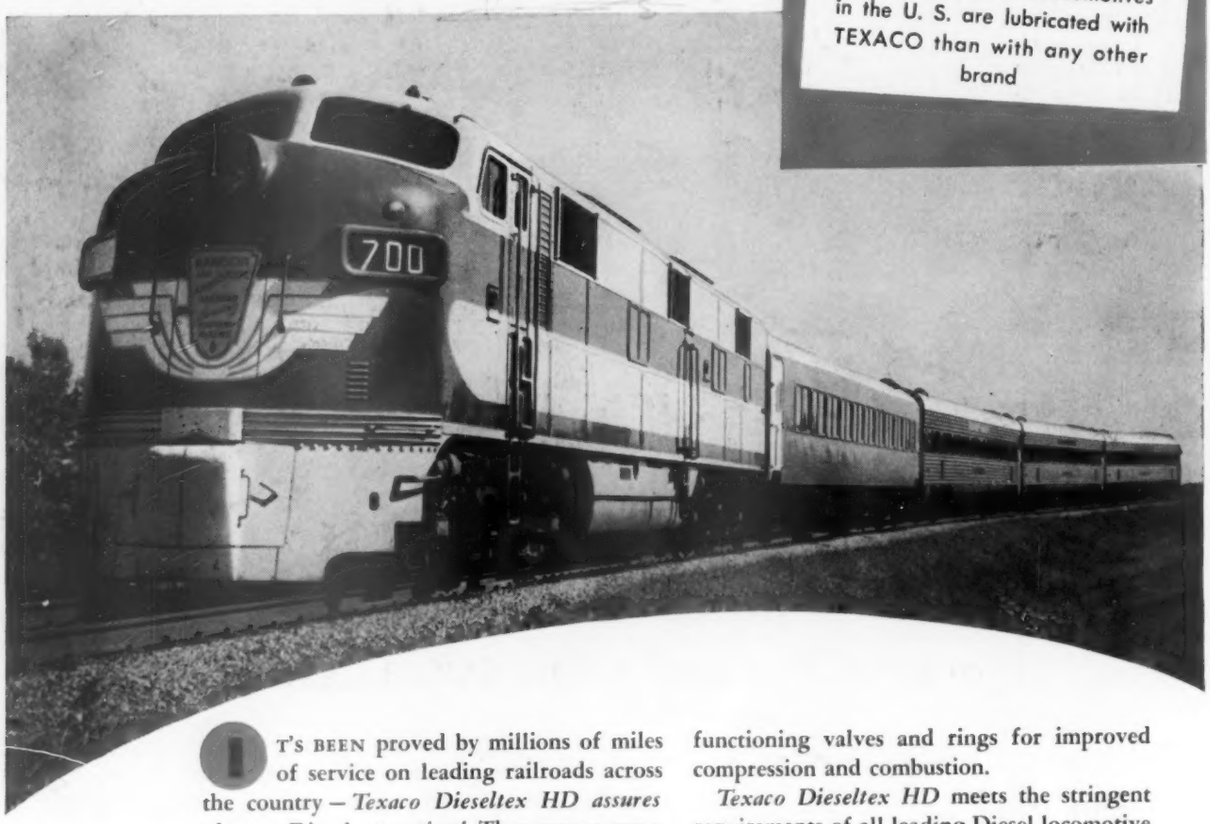
JANUARY 15, 1951

YOU CAN REDUCE { maintenance costs / fuel consumption

. . . by lubricating your Diesels with TEXACO DIESELTEX HD

RAILROADS PREFER TEXACO

More railroad Diesel locomotives in the U. S. are lubricated with TEXACO than with any other brand



IT'S BEEN proved by millions of miles of service on leading railroads across the country — *Texaco Dieseltex HD assures cleaner Diesel operation!* That means more mileage between overhauls, less wear, reduced maintenance costs, and less fuel consumption.

Texaco Dieseltex HD is specially designed for locomotive Diesel engine lubrication. It is fully detergent and dispersive, with a special heavy-duty additive that notably steps up resistance to oxidation . . . eliminating harmful carbon, varnish and gum . . . assuring free-functioning valves and rings for improved compression and combustion.

Texaco Dieseltex HD meets the stringent requirements of all leading Diesel locomotive builders.

Let a Texaco representative tell you in detail about cost-saving *Texaco Dieseltex HD* and explain Texaco's unique systematic engineering service. Just call the nearest Railway Sales office listed below, or write The Texas Company, *Railway Sales Division,* 135 East 42nd Street, New York 17, N. Y.

NEW YORK ★ CHICAGO ★ SAN FRANCISCO ★ ST. PAUL ★ ST. LOUIS ★ ATLANTA

TEXACO

TEXACO Dieseltex HD

FOR ALL RAILROAD DIESELS

TUNE IN . . . TEXACO presents MILTON BERLE on television every Tuesday night. METROPOLITAN OPERA radio broadcasts every Saturday afternoon.

Published weekly by Simmons-Boardman Publishing Corporation, Orange, Conn. Executive Offices, 30 Church Street, New York 7, N. Y. Entered as second class matter at Orange, Conn., under the act of March 3, 1879. Subscription price $6.00 for one year, U. S. and Canada. Single copies, 50 cents each. Vol. 130, No. 2.

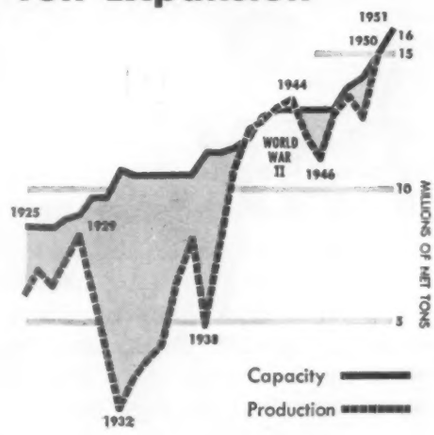
MILLION TONS MORE STEEL

Latest Increase in Bethlehem's Annual Capacity Climaxes 5 Years of Postwar 3,100,000-Ton Expansion

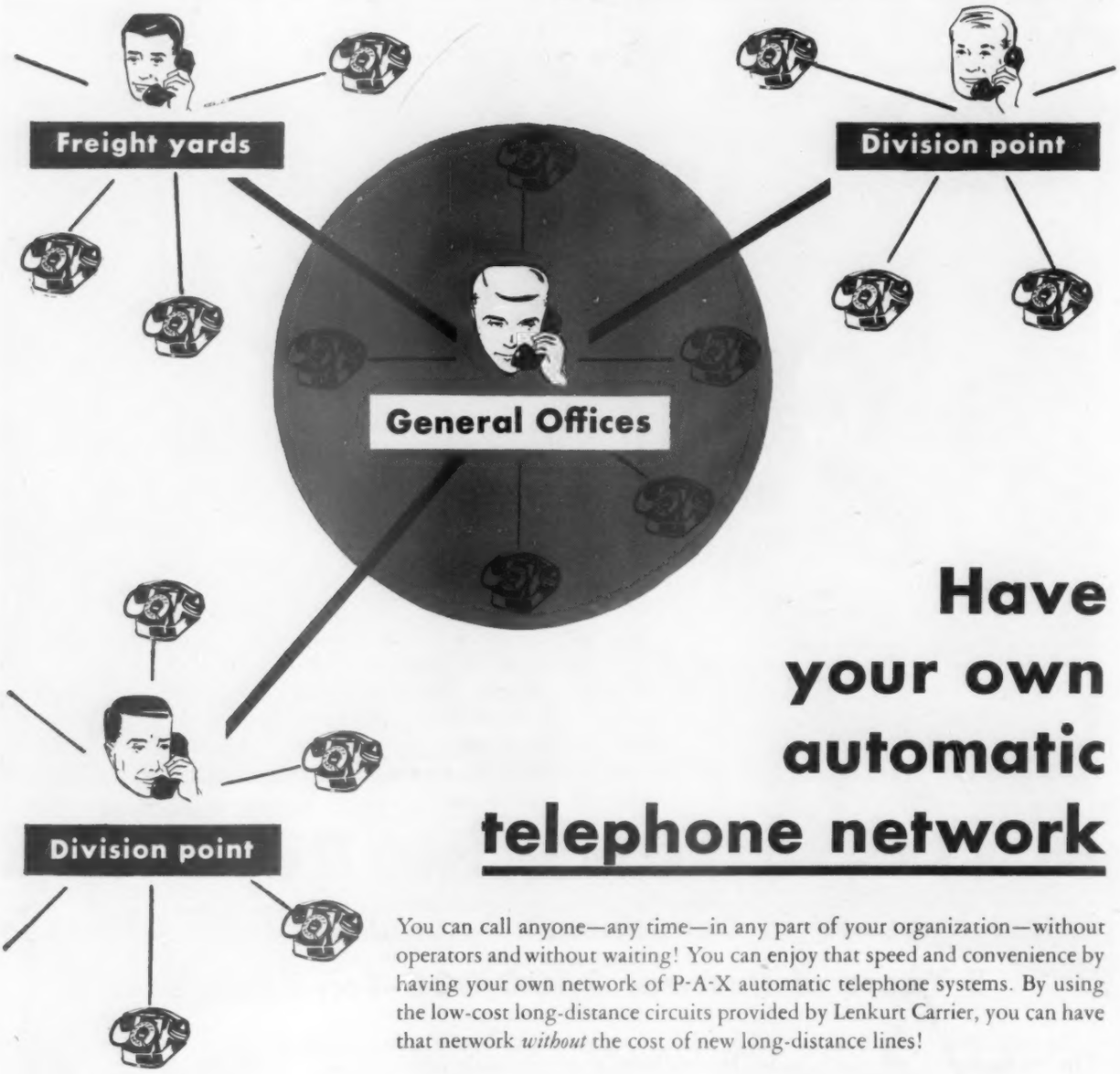
On January 1 of this year Bethlehem's steel making capacity stood at 16 million ingot-tons annually—*an increase of 1 million tons* over a year ago.

Since the war ended we have increased our annual steelmaking capacity *3,100,000 tons, or 24 per cent.*

Moreover, as the chart at the right shows, Bethlehem's steel capacity has nearly doubled in 25 years. Additional capacity can and will be created as it is needed.



BETHLEHEM STEEL ★ BETHLEHEM STEEL ★



Have your own automatic telephone network

You can call anyone—any time—in any part of your organization—without operators and without waiting! You can enjoy that speed and convenience by having your own network of P-A-X automatic telephone systems. By using the low-cost long-distance circuits provided by Lenkurt Carrier, you can have that network *without* the cost of new long-distance lines!

P-A-X telephone systems

provide the finest local communication at each office, yard, and division point. P-A-X automatic switchboards complete calls quickly with just a few turns of the dial. Build these individual P-A-X installations into an automatic telephone network, and you extend this same service throughout your organization!

Lenkurt carrier systems

can connect all your P-A-X switchboards into one integrated, company-wide network of automatic communication. Lenkurt Carrier enables you to operate this network over your existing wires, and generally provides actually *better* operation in the wire lines!

Let us tell you how you can own a P-A-X automatic telephone network. Address: AUTOMATIC ELECTRIC SALES CORPORATION, *1033 W. Van Buren St., Chicago 7, Ill. In Canada: Automatic Electric (Canada) Ltd., Toronto.* Sales offices in principal cities.

AUTOMATIC ELECTRIC

Makers of Telephone, Signaling and Communication Apparatus . . Electrical Engineers, Designers and Consultants

Vol. 130, No. 2 January 15, 1951

RAILWAY AGE

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1951 STATISTICAL ISSUE

EDITORIAL COMMENT

STATISTICAL ARTICLES

DEPARTMENTS

Published by SIMMONS-BOARDMAN PUBLISHING CORPORATION, New York 7

Railway Age Railway Mechanical & Electrical Engineer Railway Engineering & Maintenance
Railway Signaling & Communications Car Builders' Cyclopedia Locomotive Cyclopedia
Railway Engineering & Maintenance Cyclopedia American Builder
Marine Engineering & Shipping Review Marine Catalog & Buyers' Directory
Books covering transportation and building

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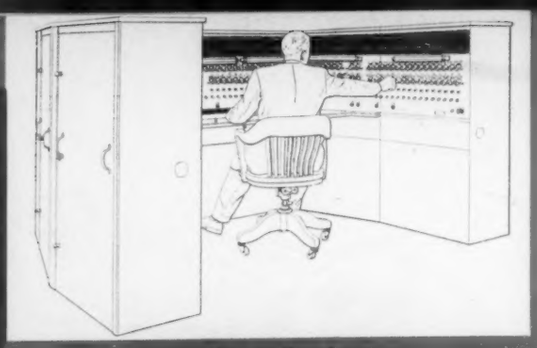
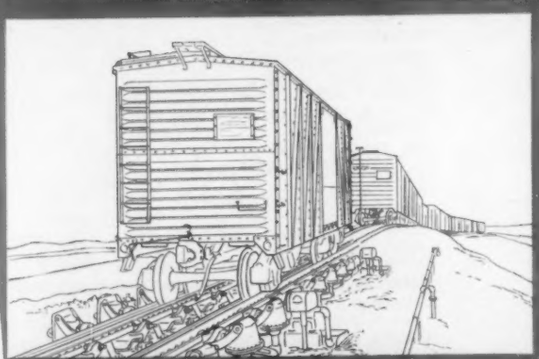
Meet PEAK TRAFFIC DEMANDS with these "UNION" Systems

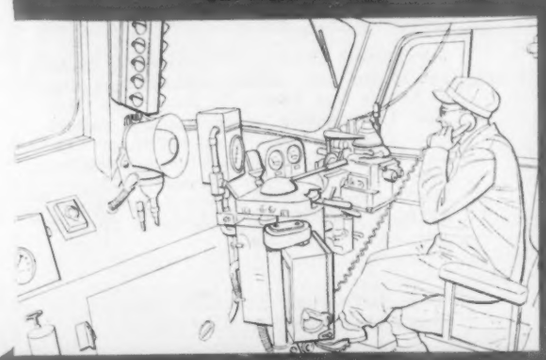


Centralized
Traffic Control

Electric and Electro-Pneumatic
Interlockings



Electro-Pneumatic
Car Retarders



Cab Signals and
Inductive Train Communication

"Union" Systems will be a big help to the railroads in meeting the ever-increasing transportation burdens brought about by present conditions.

"Union" Centralized Traffic Control, Car Retarders, Cab Signals, Interlockings and Inductive Train Communication have proved their immense value in increasing transportation capacity by eliminating unnecessary delays, preventing congestion, and building up faster schedules by saving time safely.

Call on "Union" engineers to help you study your problems . . . determine the signal systems that will help you meet peak traffic demands efficiently, with definite savings in operating costs.

UNION SWITCH & SIGNAL COMPANY

SWISSVALE PENNSYLVANIA

NEW YORK CHICAGO ST. LOUIS SAN FRANCISCO

YEAR AT A GLANCE

HIGHLIGHTS OF THE CURRENT RAILROAD SITUATION

Orders for locomotives in 1950 for domestic service totaled 4,436 units—more than in any year since 1913. Orders for freight cars for service in the United States totaled 156,481—more than in any year since 1922. The dollar volume of these equipment orders, of course, eclipsed that of any previous year in history.

For 1951—in the first quarter—estimates by the railroads as compiled by the Interstate Commerce Commission indicate that capital expenditures will be approximately 44 per cent higher than in the first quarter of 1950.

Net railway operating income for August, September and October, 1950, reached the highest totals attained for those months since 1942—but the net earnings level will be sharply reduced by the wage concessions recently made to the transportation unions. For the twelve months ended October 31, earnings on the railroads' property investment, less depreciation, averaged slightly less than 4 per cent—which, however, is a vast improvement over the less than 3 per cent earned in the calendar year 1949.

The average annual earnings of railroad employees in 1950 were 96 per cent greater than in 1940—despite a reduction in hours worked. Average hourly earnings of employees were up 111 per cent from 1940, without taking account of the recent increase to transportation employees. The increase in material prices in October was 113 per cent above the 1935-39 average. Meantime, the average increase in revenue per ton-mile has been only 40 per cent since 1940 and the average increase in passenger fares 45 per cent.

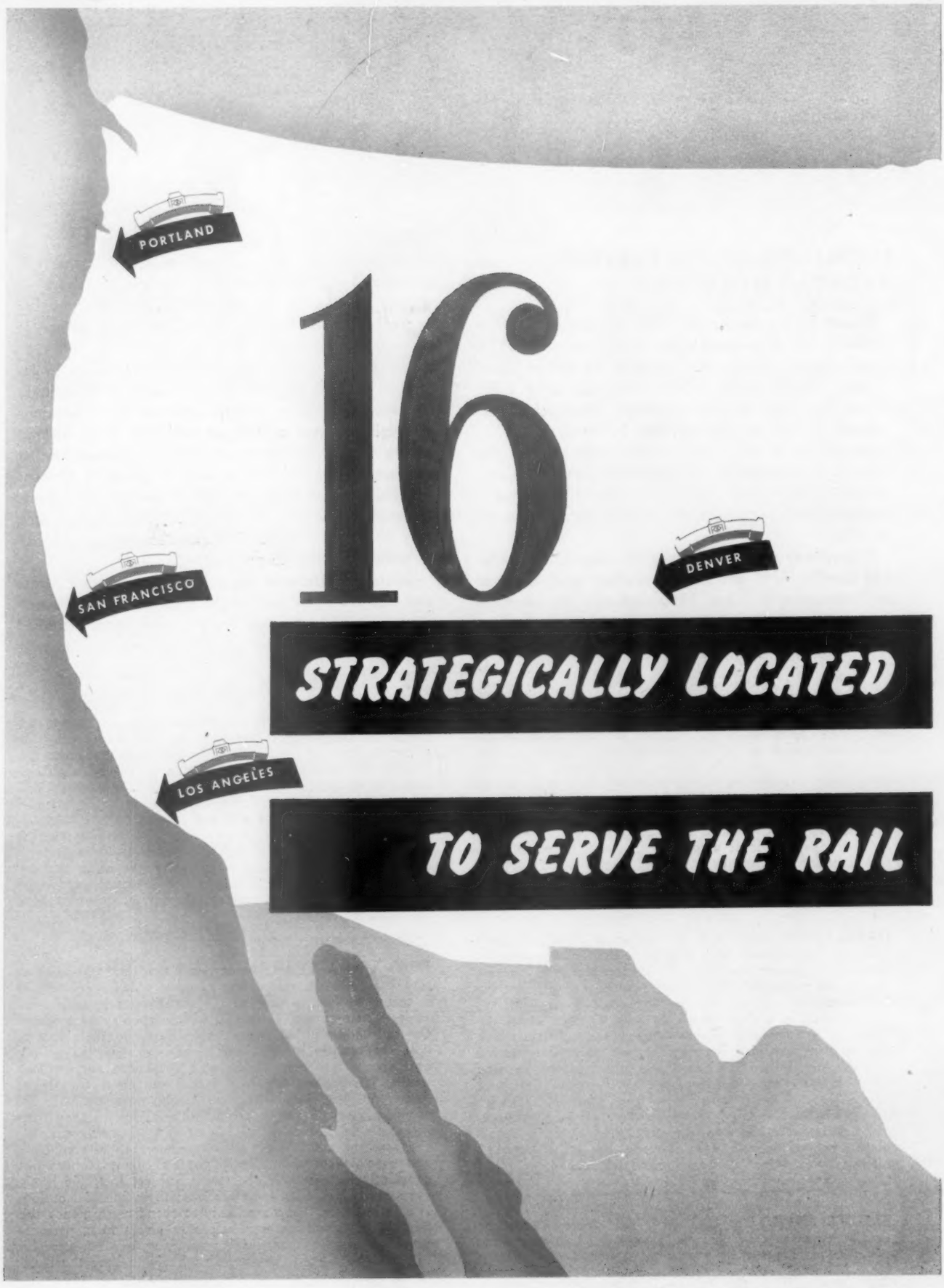
Operating efficiency has continued to increase. Gross and net ton-miles per freight train-hour reached new peaks in 1950. Average freight train speed attained an all-time high, as did net tons per train.

WORDS, STATISTICS, PICTURES: Neither words, figures nor pictures can by themselves cover adequately a full year's operations of any industry as large, as important and as widespread as the American railroads. It takes a combination of all three to do the job. Dr. Julius H. Parmelee, outstanding statistician of the industry, does it in words and figures on pages 134-154, in his summary of railway operations, which has been a regular feature of so many previous Review issues of *Railway Age*. The editors of *Railway Age* contribute a picture survey on pages 155-167, and a series of specialized articles on particular aspects of 1950 operations which occupy the rest of this issue.

DARK SPOT: Aside from the perpetual "poor relation" status of the railroads with respect to their governmentally favored air, water and highway competitors, the darkest spot in the railroads' 1950 history was the attitude of their own employees—an attitude which led to two major strikes and a threat of a third which, in turn, brought about the technical governmental seizure and operation still in effect. The wage settlement apparently reached with the operating brothers just before Christmas was upset in the opening days of 1951, when (as reported in the news) all four unions rejected the proposed agreement. And so, as shown by the calendar of labor events on page 179, the railroads enter 1951 with an unsatisfactory labor situation immediately behind them, and a confused, uncertain, but definitely gloomy, labor situation immediately ahead.

SLIGHT IMPROVEMENT: For two decades or more, thanks to discriminatory and short-sighted governmental policies, and the equally short-sighted attitudes of railroad labor leaders, the most depressing aspect of the whole railroad situation has been the poor overall financial condition of the industry. In 1950, for the first time in some years, it was possible to detect some slight signs of change for the better, despite the absence of any real improvement in either competitive relations or labor understanding. The reasons for some guarded optimism as to the financial outlook are set out in the article which starts on page 172. An added reason is the relative improvement in the financial resources of most large railroads shown in the table of cash, assets and liabilities on page 170. And another is the fact that, as reported in the financial news columns, a railroad—the Nickel Plate—is actually proposing to raise new capital by selling *common stock*—something which hasn't happened in so long that the last event of its kind has been all but forgotten!

INTO A NEW YEAR: Being American, the railroads look into 1951 with the same grave concern which everyone else is bound to feel in view of the unsatisfactory world situation. Whatever may lie ahead for the country as a whole, the railroads will, of course, as always, do their best to help the country meet it. For themselves, they have their own special problems—labor and subsidized competition; neither is near settlement, and both can cause trouble, as they have done before. The railroads must contend, like everyone else, with high prices, while trying to keep their own rates as low as possible. But otherwise, the railroads can face the year ahead with some measure of confidence and even of optimism. Their physical plant is becoming constantly better; their operations, subject to traffic levels, are steadily becoming more efficient; their financial outlook is a little better. They are likely to spend more money this next 12 months than ever before in any similar period—provided, of course, materials and manpower are available to spend it on—but they are also likely to have the traffic to support those expenditures. And from that traffic they *may* eke out something for themselves—and their owners.


PORTLAND
16
DENVER
SAN FRANCISCO
STRATEGICALLY LOCATED
LOS ANGELES
TO SERVE THE RAIL

PLANTS

ROADS

American Brake Shoe Company, through these strategically located foundries, assures a continuing supply of railroad products. Maintaining its tradition of leadership, Brake Shoe has pioneered improvement after improvement for efficient, safe and low-maintenance operation of railway equipment.

These developments have ranged from the earliest Diamond "S" brake shoe to the newest carbon insert brake shoe and the 3 in 1 American Brake Shoe Controller for diesel locomotives. The American Brake Shoe Company, 230 Park Ave., New York 17, N. Y.

AMERICAN Brake Shoe COMPANY

BRAKE SHOE AND CASTINGS DIVISION

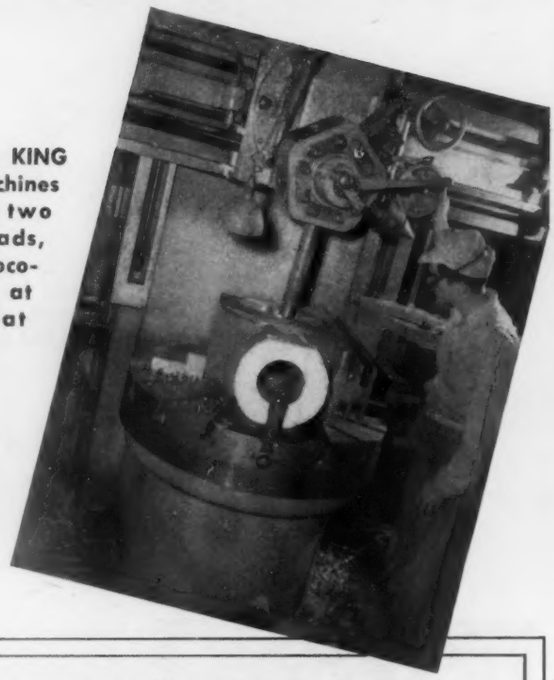
6341

Modern Railroad Management

Shown here are several KING Boring & Turning Machines recently installed by two major Eastern railroads, turning out important locomotive repair parts at high speeds and at minimum cost.

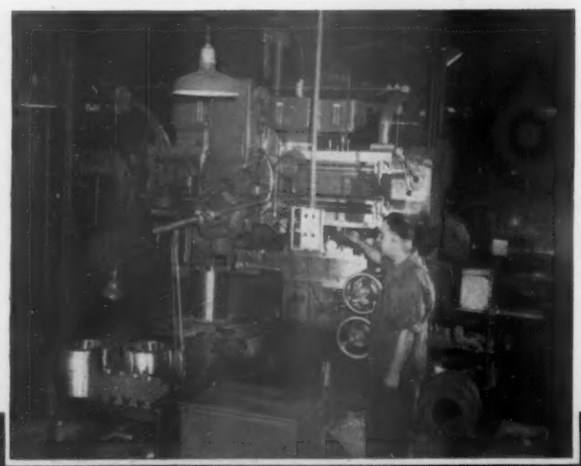
●

Two views showing a new 42" KING Boring & Turning Machine facing off a multiple bearing crosshead for locomotive engine.



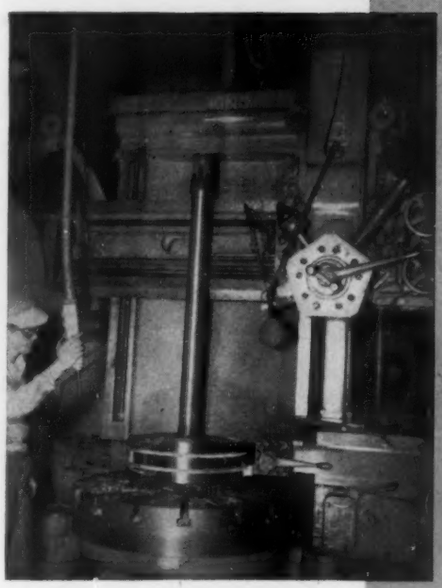
KING VERTICAL BORING & TURNING MACHINES

are made in ten sizes: Single Column Machines, one head on rail—30", 36", and 42" swing; Double Column Machines, one or two heads on rail—52", 62", 72", 84", 100", 120", and 144" swing. All sizes available with or without side head.



Two views of a new 36" KING machining a brass crank arm lateral washer for a steam locomotive. These washers are in two sizes: 10-1/2" x 7/16" or 3/8" thick. 22 washers are produced from each stock casting.

SPEEDS SHOP SCHEDULES, INCREASES LOCOMOTIVE AVAILABILITY



Finishing bronze surface of a locomotive piston rod on a new 42" KING.

The King Way

Another new 42" KING machining side rod brass with a carbide tool.

Executives of leading railroads today are giving top priority to getting the greatest possible utilization of locomotives through more efficient, more economical maintenance.

KING is playing an important part in this progressive program. More and more, railroads are replacing old, inadequate equipment with new-series KING Boring & Turning Machines. As a result, they get increased maintenance efficiency—a definite speeding up of locomotive repairs through the turning out of dependable parts in less time, at less cost.

Extra heavy construction gives new-series KING Machines the *increased rigidity* essential for successful use of carbide tools. There's more power, more versatility, a wider range of feeds and speeds. All controls are conveniently located at front of the machine.

KING Engineers are thoroughly acquainted with railroad shop problems. Call on us any time for help in speeding production and reducing cost of your boring and turning work.

Specifications and detailed description of construction and operating features sent promptly on request

American Steel Foundries

KING MACHINE TOOL DIVISION

CINCINNATI 29, OHIO

Builders of King Vertical Boring & Turning Machines and Sebastian Lathes

IT'S
TELEVOICE!

–PERFECTED BY
EDISON–

THE ANSWER
TO THE
RISING COSTS OF
WRITTEN
COMMUNICATIONS!

Believe it or not . . . this is a Dictating Instrument!

And it's an EDISON first!

The smallest . . . lightest . . . simplest and most inexpensive Dictating Instrument ever invented!

IN ONE HISTORY-MAKING stride, Edison has advanced instrument dictation years ahead of anything ever before offered! The EDISON TELEVOICE System is an *entirely new* facility for handling your written communications—new in concept and scope—new in the instruments employed—new in the direct, simple, economical way it serves you!

Imagine a system of recording from many stations to a central point. Imagine that these EDISON TELEVOICE Stations are like your present telephone—as small and dependable—and as simple and familiar, so that no instruction is necessary! For the first time, you have no discs, cylinders, belts or index-slips to change or manipulate!

Consider that start, stop and playback, as well as length and correction indications, are all accomplished *by remote control,* with simple push-buttons right on the TELEVOICE Station!

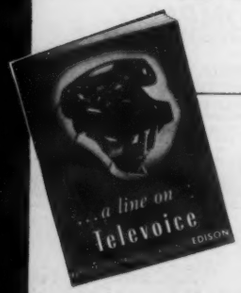
Now you can understand how profoundly Edison has transformed instrument dictation—turning it into an office necessity like the telephone and the typewriter.

The EDISON TELEVOICE System, moreover, achieves an efficiency hitherto unapproached. One to twenty TELEVOICE Stations connect to the EDISON TELEVOICEWRITER, located at the *secretary's* desk. Hence, dictation is now "delivered" to her—instantly, clearly, continuously. It cannot sit, neglected, on some dictating instrument. Messenger pick-up service is eliminated. The secretary paces her transcribing to the work *as it is dictated,* and returns "the world's fastest signature service" without peaks or pressure.

TELEVOICE installations are made on a work-load basis to assure free-line service to all concerned. The economy is obvious. With many dictators being served by only *one* recording machine, costs of instrument dictation are cut by as much as 66⅔%!

Edison TeleVoicewriter

The Televoice System



GET THE WHOLE STORY—NOW! Send for this new descriptive booklet. Or, to arrange for a demonstration, call "EDIPHONE" in your city. In Canada: Thomas A. Edison of Canada, Ltd., Toronto 1, Ontario.

EDISON, 40 Lakeside Avenue, West Orange, N. J.
Okay—send me A LINE ON TELEVOICE.

NAME _____

COMPANY _____

ADDRESS _____

CITY _____ ZONE _____ STATE _____

Thomas A Edison
INCORPORATED

HERE'S PROOF that AMCRECO big dividends maintenance

THE PROOF is in this test crib which has been exposed to the weather for over 39 years!

- **These four ties were not treated**
- **The balance of these ties were treated by the AMCRECO LOWRY PROCESS**

The Amcreco Lowry Process Creosoted Cross Ties shown in the recent photograph at the right were taken from the first charge of ties treated for the New York Central Railroad and cribbed together in 1911 at the Amcreco plant in Rome, N. Y. Four untreated heart longleaf pine ties—then considered to be the longest lived ties available—were laid on top as indicated by the checks. The treated ties are still in perfect condition; the untreated ties failed long ago.

THE exacting demands of modern railroading with heavier loads, greater traffic and higher speeds make the economies of Amcreco Lowry Process Treatment more obvious than ever before. Amcreco treatment is a vital contribution to lower operating costs, greater safety and forest conservation.

The tie renewal record of the Delaware, Lackawanna and Western Railroad shown on the opposite page is typical of the economies that can be effected through the use of Amcreco Lowry Process Treatment.

The extensive facilities and experience of the Amcreco organization are available to all railroads and we urge you to take advantage of them. Your inquiries are invited.

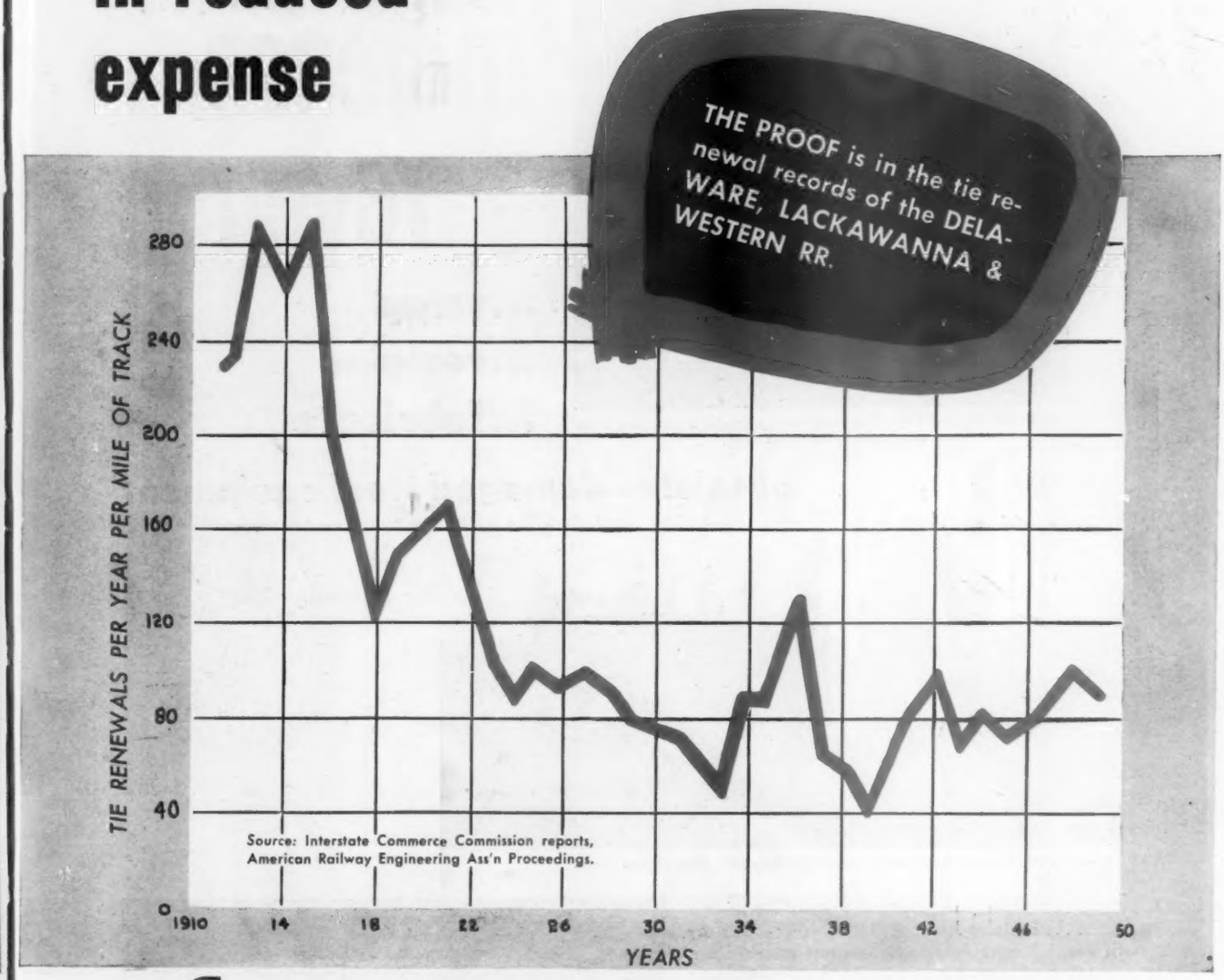
AMERICAN CREOSOTING COMPANY
INCORPORATED

COLONIAL CREOSOTING COMPANY INCORPORATED

AMCREO LOWRY PROCESS CREOSOTED WOOD

GEORGIA CREOSOTING COMPANY INCORPORATED

Lowry Process pays in reduced expense



THE chart above dramatically illustrates the benefits secured by the Delaware, Lackawanna and Western Railroad after instituting a program of preservative treatment of its cross ties. Note how rapidly the tie replacement curve drops off after 1915 as more and more untreated ties were replaced with Amcreco-treated ties.

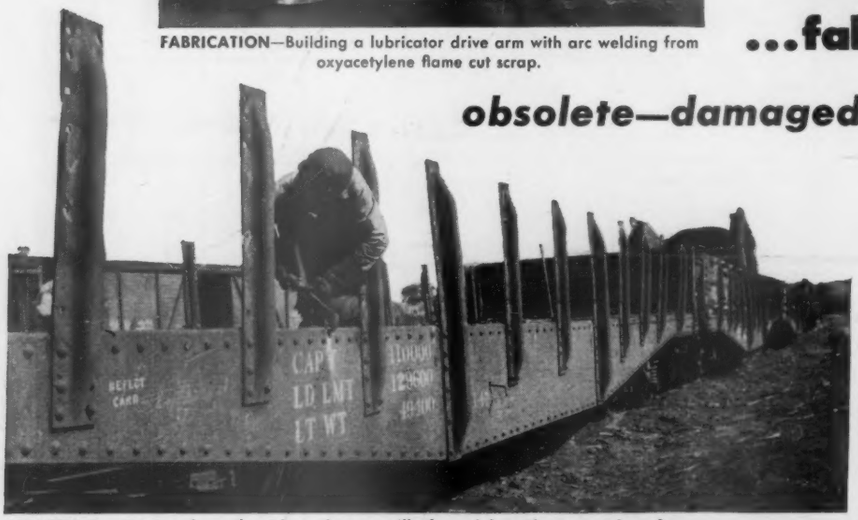
Previous to treatment, annual tie replacement averaged over 250 per mile of track. Since the Amcreco program was put into effect, replacements have been reduced to an average of less than 100 per year per mile of track—and this in the face of far heavier loads, heavier traffic and higher speeds . . . Proof of the economy of Amcreco Treatment.

FABRICATION—Building a lubricator drive arm with arc welding from oxyacetylene flame cut scrap.

3 ways to increase revenue

...scrap
...reclaim
...fabricate

obsolete—damaged steel equipment



SCRAPPING — Cutting down the side and center sill of gondola with oxyacetylene flame.

Get the most revenue from your old steel. Cut it into salable shape . . . reclaim it . . . or fabricate it into new parts with Airco oxyacetylene flame and electric arc processes and equipment . . . do the job faster — at less cost.

Oxyacetylene flame cutting has made the scrapping of box cars, gondolas, locomotives, and other equipment a highly profitable procedure for railroads today.

Further, coupled with its companion process — the electric arc — it is a real money saver for reclaiming such items as brake heads, superheater units and driving wheels from old or damaged equipment . . . and, also, for quickly fabricating from scrap: road signs, coupler raisers, fence posts, and a variety of other parts.

Call in an Airco Railroad Representative. He'll be glad to advise you on the most efficient application of the oxyacetylene flame and electric arc as it affects your problem. His long experience helping other roads, plus the wealth of practical knowledge he has for most efficient use of the oxyacetylene flame and electric arc, will more than help *you* get top revenue from your scrapping and reclamation operations. Write or phone your nearest Airco office today.

RECLAMATION—Damaged coupler reclaimed by arc (or oxyacetylene) welding.

AIRCO AIR REDUCTION

AIR REDUCTION SALES COMPANY • AIR REDUCTION MAGNOLIA COMPANY
AIR REDUCTION PACIFIC COMPANY
REPRESENTED INTERNATIONALLY BY AIRCO COMPANY INTERNATIONAL
Divisions of Air Reduction Company, Incorporated
Offices in Principal Cities

AGE

CONFIDENTIAL REPORT

Performance Record of

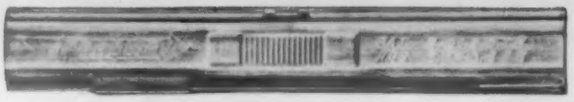
FAIRBANKS-MORSE

4800 CONSOLIDATION

on Scheduled Runs

for a Leading Railroad*

* The Facts inside are what count
..Railroad's name withheld
for obvious reasons



PERFORMANCE RECORD OF FAIRBANKS-MORSE DEMONSTRATOR

LOCOMOTIVE 4801-4802

The 4800 hp. 2-unit locomotive operated satisfactorily on main line trains as shown in detail on the attached sheets. Due to good acceleration it was possible to gain time in comparison with our standard running time on our official timetable. (1)

On the [redacted] on train [redacted] the performance with the regular train consist proved to be exceptionally good.

On the Westbound trips the lowest speed over the 1.69% grade between [redacted] and [redacted] was 41.0 M. P. H. The locomotive has a gear ratio 57.22 maximum speed 110 M. P. H.

SINGLE UNIT OPERATION (2400 hp.)

The 2400 hp. operated on time every instance where the theoretical car limit was developed and kept during operation. On train [redacted] on the [redacted] the car limits were exceeded by one to two cars, but the train was able to make its running time. This is partially due to the rather limited speed on these runs, the allowance for stops and the good acceleration of the Fairbanks-Morse demonstrator locomotives. The performance should not be considered a final analysis or a conclusion that the locomotive can handle 14 cars on this road. (2)

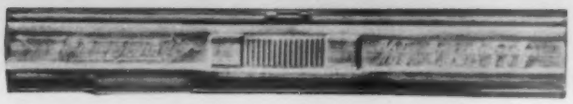
PERFORMANCE

The technical performance on both locomotive units working double as a locomotive and singly as a locomotive was very satisfactory during all demonstration runs. Very little if any maintenance was necessary on these units during the demonstration on our railroad. (3)

(1) "Good Acceleration," so important in making up time, is a characteristic of all Consolidations. It comes from more horsepower and more weight on drivers

(2) Consolidations can pull more cars .. they're shorter, they have lower total weight

(3) Low maintenance, low shopping expense, faster turn-around!



FAIRBANKS-MORSE DEMONSTRATOR 4801-4802

Train No.	Cars	Time Allowed (Minutes)	Time Consumed (Minutes)	Time Gained	Remarks
[redacted] 8/6	18	100 Minutes	99 Minutes	1 Minute	Lost 2 Minutes a/c Yellow Signals
[redacted] 7/23	13	155 Minutes	146 Minutes	9 Minutes	Stopped at [redacted] for Passengers, [redacted] for Passengers and 15 M. P. H. at [redacted] Crossing Over-Amount of Delays not specified.
[redacted] 7/23	13	170 Minutes	142 Minutes	28 Minutes	Made 2 stops at [redacted]
[redacted] 7/23	11	165 Minutes	160 Minutes	5 Minutes	Performance Good
[redacted] 7/24	9	157 Minutes	150 Minutes	7 Minutes	15 M. P. H. Slow Order West of [redacted] Amount of delay not specified.
[redacted] 7/25	9	175 Minutes	175 Minutes		Delayed [redacted] for Repairs to Baggage Car and [redacted] due to red signal, amount of delay not specified.
[redacted] 7/25	9	190 Minutes	178 Minutes	12 Minutes	Performance good
[redacted] 7/26	11	150 Minutes	169 Minutes	19 Minutes lost a/c Operating and Station delays	Arrived [redacted] 12 Minutes ahead of time delayed 20 Minutes, [redacted] to [redacted] a/c Operating and Station Delays.
[redacted] 8/1 4801 (1 unit)	9	195 Minutes	178 Minutes	17 Minutes	Delayed at [redacted] for signals amount not specified.
[redacted] 8/1	10	175 Minutes	171 Minutes	4 Minutes	Delayed 3 Minutes [redacted] a/c Station Work.
[redacted] 8/2 4801 (1 unit)	11	163 Minutes	163 Minutes		Performance Good
[redacted] 8/2 4801 (1 unit)	11	157			Performance Good
[redacted] 8/4 4801 (1Unit)	Not Stated	147			
[redacted] 7/31 4802 (1 Unit)	9	210			

Out of 69 scheduled runs, these are typical. "Performance Good" about sums up this report on the Consolidation 4800 - used both as a single 4800 hp. locomotive and as two 2400 hp. units!

Fairbanks, Morse & Co.

600 SOUTH MICHIGAN AVENUE

CHICAGO 5

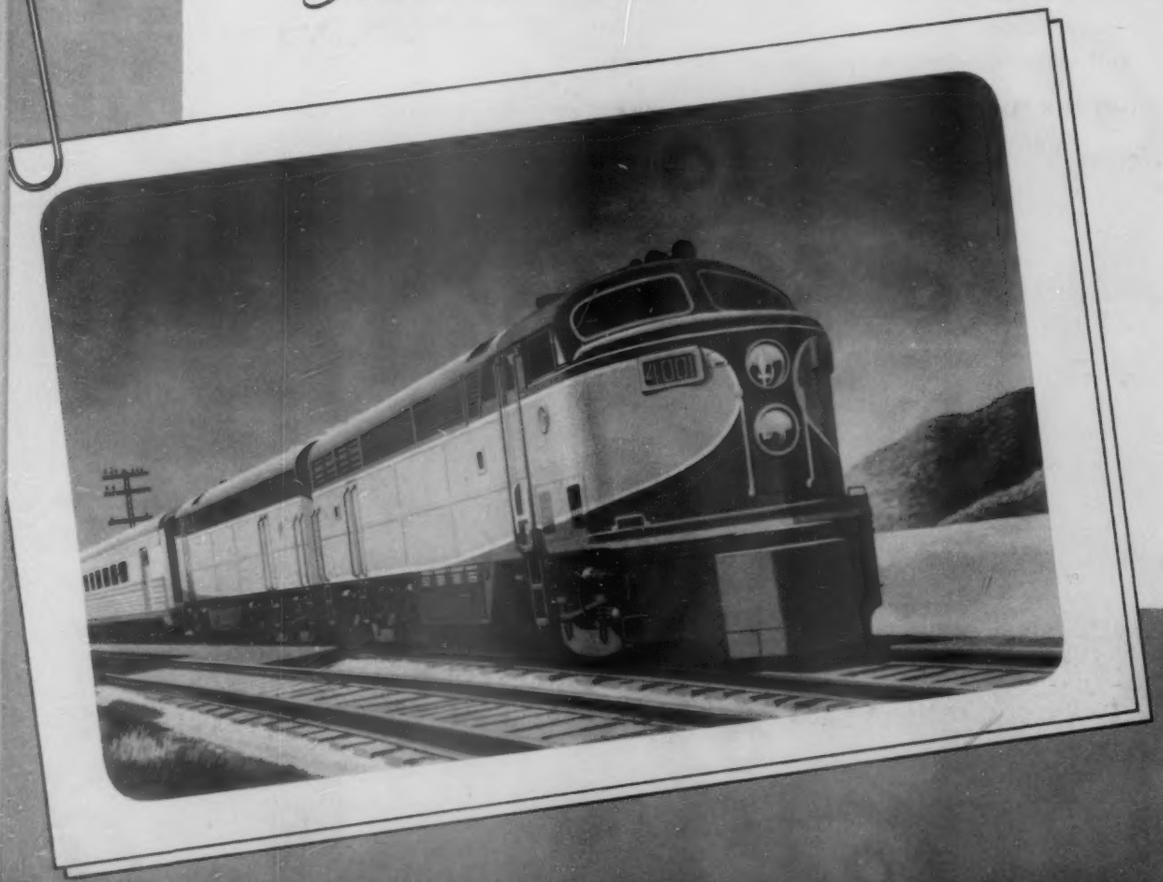
The outstanding performance of Consolidations is road-proved. Among many factors, it is due to:

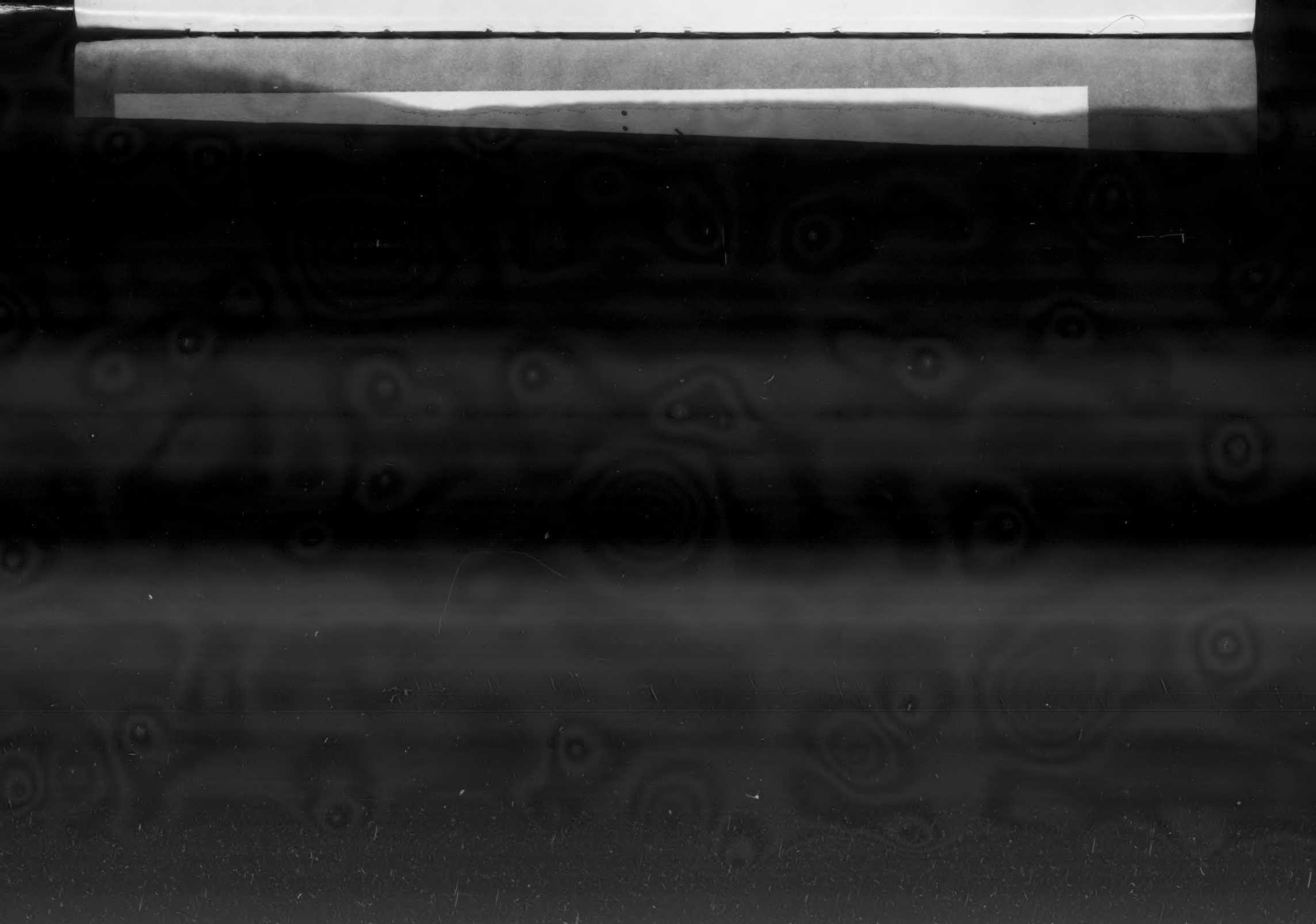
The Opposed-Piston Engine: Any one of three - 1600, 2000 and 2400 hp. Characteristics: Simple two-cycle design, 40% fewer moving parts, impressively easy, low cost maintenance.

Amply designed accessories: dynamic braking, electrical equipment, boiler, compressor, etc., in the 2400 hp. unit are also used in the 1600 and 2000 hp. units.

"C" Line overall design: maximum interchangeability and accessibility facilitate inspection and repair to minimize turnaround time.

If you need diesel road locomotives...
— you need
Fairbanks-Morse "Consolidations"





Just as a vault safeguards valuables, so does Streamlite HAIRINSUL safeguard vital shipments of perishables against damage from sudden and extreme temperature changes.

Streamlite HAIRINSUL, the all-hair insulation which weighs 40% less, is specified by major builders of refrigerator cars because it is the most efficient and economical.

Highlights of the principal advantages gained by using Streamlite HAIRINSUL are given at the right —write for complete data.

Sets The Standard By Which All Other Refrigerator Car Insulations Are Judged

Streamlite **HAIRINSUL**

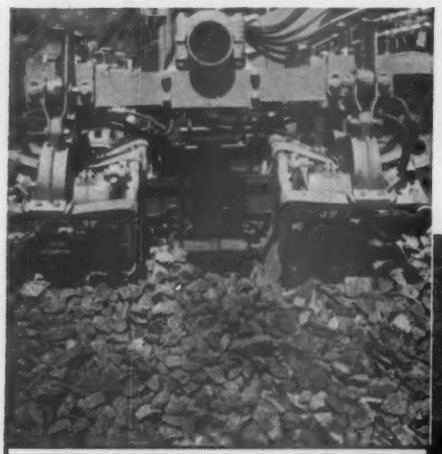
AMERICAN HAIR & FELT CO.

Dept. H5010, Merchandise Mart, Chicago 54, Ill.

JACKSON
MULTIPLE TAMPER

DEFINITELY PROVED BY MORE THAN 50 ROADS and CONTRACTORS—The Finest of Major BALLASTING Machines

The surest, shortest, most inexpensive route to the most uniformly-tamped, finest and longest-lasting track is the **Jackson Multiple Tamper.** That is the verdict of more than 50 top-flight maintenance chiefs who during the past three years have used them for major ballasting operations, under practically all of the varying conditions, and employing all the types of ballast normally encountered in putting up track. In the face of what may be the greatest of all labor shortages, unprecedented traffic and high costs, we believe it would pay you handsomely to learn, at once, the great benefits to be derived from the use of these machines. We will gladly arrange to have a thoroughly practical field engineer discuss them with you, send descriptive literature or advise where you conveniently can observe a **Jackson Multiple** in operation.



IN OPERATION ON THE LEHIGH. NOTE CHARACTER OF THE BALLAST BEING USED.

ELECTRIC TAMPER & EQUIPMENT CO.
LUDINGTON, MICH.

JACKSON
MULTIPLE TAMPER

Now ALSO FUNCTIONS AS A

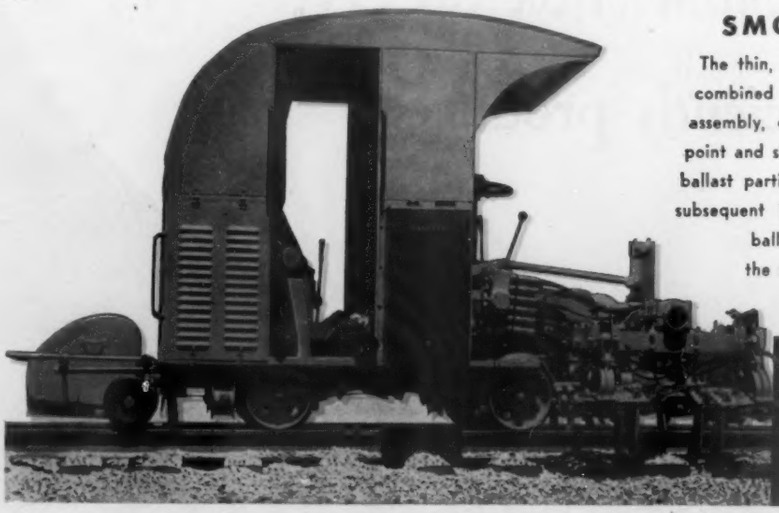
FAST and EFFICIENT SMOOTHING *Machine*

U-651-A BLADE

THE KEY TO FASTER, LESS COSTLY

For those smoothing operations, in which there is little or no raise and no additional ballast is spread, the same **Jackson Multiple** which has proved so highly and universally successful on new ballast insertions, can be quickly converted to a phenomenally fast, efficient smoothing machine. All that is necessary is to change to the narrow blades shown here with their newly developed smoothing tips.

Not only can far more track be put up in this manner, but much greater uniformity and better consolidation are achieved — assuring smooth track ***that stays up!*** Let us tell you more about this tremendously important application of the Multiple Tamper.



SMOOTHING OPERATIONS

The thin, narrow smoothing tip with its vibratory action, combined with the weight of the entire Multiple Tamper assembly, quickly and easily penetrates the ballast. The point and step of the tip pushes and wedges together the ballast particles under the tie, eliminating the voids, and subsequent insertions introduce fine fragments from the ballast section to completely fill and tightly pack the entire bed.

ELECTRIC TAMPER & EQUIPMENT CO.
LUDINGTON • MICHIGAN

PS-1

A *quality* box car . . .

efficiently produced.

A total of 41,011 PS-1 box cars have been ordered by *forty-one* railroads since the PS-1 was introduced *four years ago!**

Twenty railroads have *re-ordered* . . . some as many as 3 and 4 times. *Fourteen* railroads have ordered 1000 PS-1's or more apiece . . . a few have ordered 2000, 3000 and 4000 apiece.

**As of December 1, 1950 . . . actually four years and two months after the first order which was placed by Lehigh Valley on October 7, 1946.*

Pullman-Standard

CAR MANUFACTURING COMPANY

CHICAGO • NEW YORK • CLEVELAND • WASHINGTON, D. C. • PITTSBURGH
BIRMINGHAM • SAN FRANCISCO

BALDWIN-Westinghouse

TROUBLE LIKE THIS

when you use

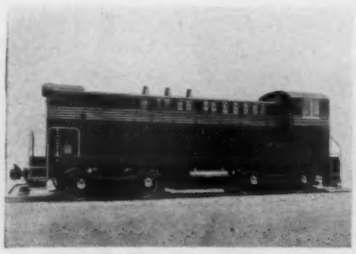
BALDWIN-Westinghouse Units

YPE FOR EVERY ASSIGNMENT

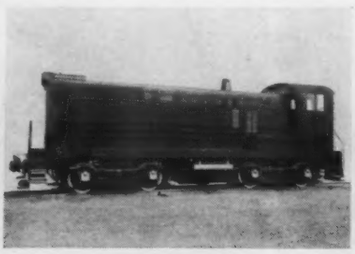
You'll find a big advantage, when you are *buying* locomotives, in the completeness of the B-W line.

You'll find a *bigger* advantage, when you are *using* locomotives, in the adaptability and versatility of each of the eight B-W units. Excessive specialization doesn't limit their usefulness, and create "square peg-round hole" situations when assignment problems come. Every unit can do many jobs . . . and do each one well.

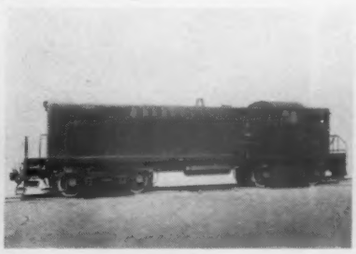
Basically, this ability of Baldwin Westinghouse locomotives to meet new responsibilities is due to increased horsepower, and—of greater importance—increased *tractive effort* ratings. Maintenance problems are simplified by interchangeability of parts. You'll find that Baldwin-Westinghouse units will always deliver a little *more* than they are supposed to . . . for a little *less* than you expect.



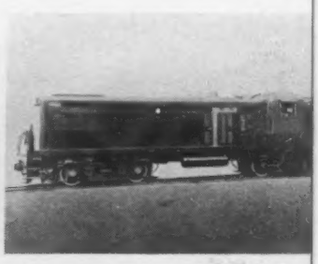
800-hp.
Switching Locomotive.



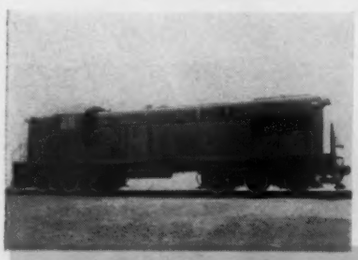
1200-hp.
Switching Locomotive.



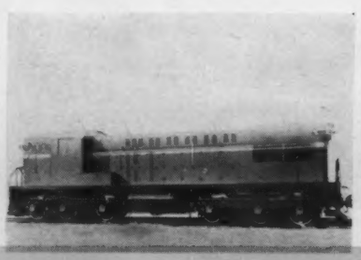
1200-hp.
Road Switching Locomotive.



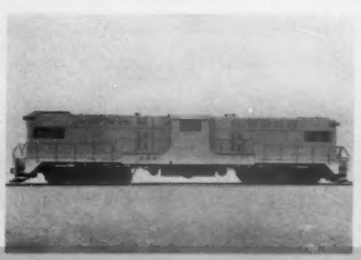
1600-hp. All-service Locomotive
4-wheel trucks.



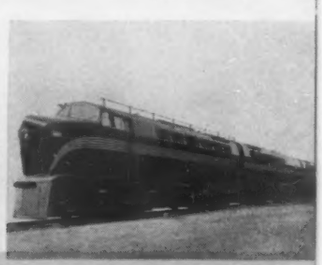
1600-hp. All-service Locomotive,
6-wheel trucks, 4 traction motors.



1600-hp. All-service Locomotive,
6-wheel trucks, 6 traction motors.

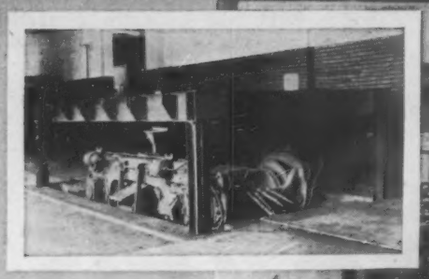


2400-hp.
Road Transfer Locomotive.



6400-hp. Road Locomotive made
of four (4) 1600-hp. units.

DIESEL ELECTRIC LOCOMOTIVES



SAVE TIME with Whiting Drop Tables. All types for all requirements. Serving pits from 48 inches to 26 feet wide. Capacities from 10 to 150 tons.

This ENGINEERED-TO-YOUR NEEDS EQUIPMENT

SAVES

SAVE TIME with Whiting Cross-Over Bridges. Above left—Shows bridge lowered to track level. Right—Raised for bridging between platforms.

SAVE TIME with the Whiting Trackmobile. Lightweight, gasoline powered utility unit that travels on railway track or ground.

SAVE TIME with Whiting Transfer Tables. Shift locomotives or cars from track to track at the rate of 125 feet per minute. Engineered to any location.

SAVE TIME—Wash trains at the rate of 80 ft per minute with Whiting Train Washers.

TIME

IN OVER 1,000 SHOP APPLICATIONS

SAVE TIME with Whiting Monorail Systems. For light material handling. SAVE TIME with Whiting Electric Traveling Cranes. For heavy handling.

Understanding—and solving your maintenance and service problems—that is Whiting's business. From the days of the "highball" to the streamlined era—railroads everywhere have profited from Whiting's "know-how."

Whether your terminal is large or small, here is equipment engineered to your needs. It simplifies heavy handling. It keeps shop operations on schedule. It reduces lay-up losses. IT SAVES TIME.

Let us work with you on your next shop problem.

WHITING CORPORATION

15603 Lathrop Avenue, Harvey, Ill.

RAILROAD MAINTENANCE EQUIPMENT

Offices in Chicago, Cleveland, Cincinnati, Detroit, Houston, Los Angeles, New York, Philadelphia, Pittsburgh, Seattle, and St. Louis. Representatives in other principal cities. Canadian Subsidiary: Whiting Corporation (Canada) Ltd., Toronto, Ontario. Export Department: 30 Church Street, New York 7, N. Y.

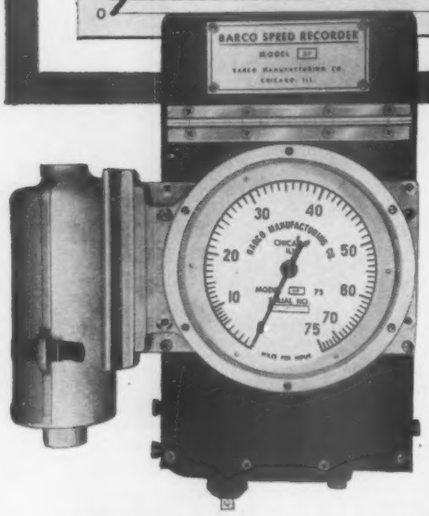
SAVE TIME with Whiting High-lift Portable Jacks. Fast operating. Easily moved. Safe.

DROP TABLES • LOCOMOTIVE BODY SUPPORTS
SWING GATES • SPACER POSTS • TRANSFER TABLES
SIDE RELEASE TABLES • CROSS-OVER BRIDGES
PORTABLE JACKS • LOCOMOTIVE HOISTS
ELECTRIC TRAVELING CRANES • CAR PULLERS
LOCOMOTIVE SPOTTERS • DIESEL DOLLIES
TRACKMOBILE • MONORAIL SYSTEMS
TRAIN WASHERS

BARCO SPEED RECORDERS

—*the Facts when you need them!*

"How fast was it going?"..."Where did it stop?"...."How did the run vary from schedule?"... accurate, indisputable answers to these and many other questions are yours *in permanent record form* when your motive power is equipped with BARCO SPEED RECORDERS.



Model DP-75 Speed Recorder. This new model is now being supplied in increasing quantities for installation on new Diesel-Electric Freight Locomotives. It indicates and records speeds from 0 to 75 MPH. Mileage and location can be determined from the record tape.

Model SER Switch Engine Recorder. Provides 24-hour daily chart of time standing, time moving, speed, distance traveled, and total mileage. *Helps you get the most out of your investment!*

Accuracy, Dependability!

PROVED BY MILLIONS OF MILES OF SERVICE

The accuracy and dependability of BARCO SPEED RECORDERS are unquestioned. A typical user* reports accuracy within 2% at 100 MPH after a million miles of service! This is the kind of performance you want and one reason why you should INSIST ON GETTING BARCO SPEED RECORDERS.

BARCO "SUPER-RECORD" RECORDING TAPES, CHARTS

Specially designed to match the precision of the instruments. Produced under rigid quality controls to assure perfect recording, freedom from operational difficulties. Simple, easy to use. Tapes available in five speed ranges: 60, 75, 90, 100, or 120 MPH; mileages to 2400.

INHERENT MECHANICAL ACCURACY

Only BARCO gives you the accuracy and dependability of ALL-MECHANICAL construction. A tested and proven design, manufactured with precision tooling. Easy to install; simple to maintain.

RECORDERS FOR EVERY TYPE OF LOCOMOTIVE

The BARCO line is complete! Records of every locomotive operation—for every type of engine in service or being built for railroads today. *Ask for information.* BARCO MANUFACTURING CO., 1800 B Winnemac Ave., Chicago 40, Ill.

*Name on request.

Nationwide Sales and Service

BARCO RECORDERS

For Diesel and Steam
Passenger, Freight, and Switch Engines

FREE ENTERPRISE—*THE CORNERSTONE OF AMERICAN PROSPERITY*

RAILROAD problem child— food service

. . . ***it's a fact*** . . . serving food aboard America's trains is a PROBLEM CHILD. Faced with rising costs, and sensible passenger menu prices, more and more railroads are "turning to Colonna" for some of the answers to perplexing food problems.

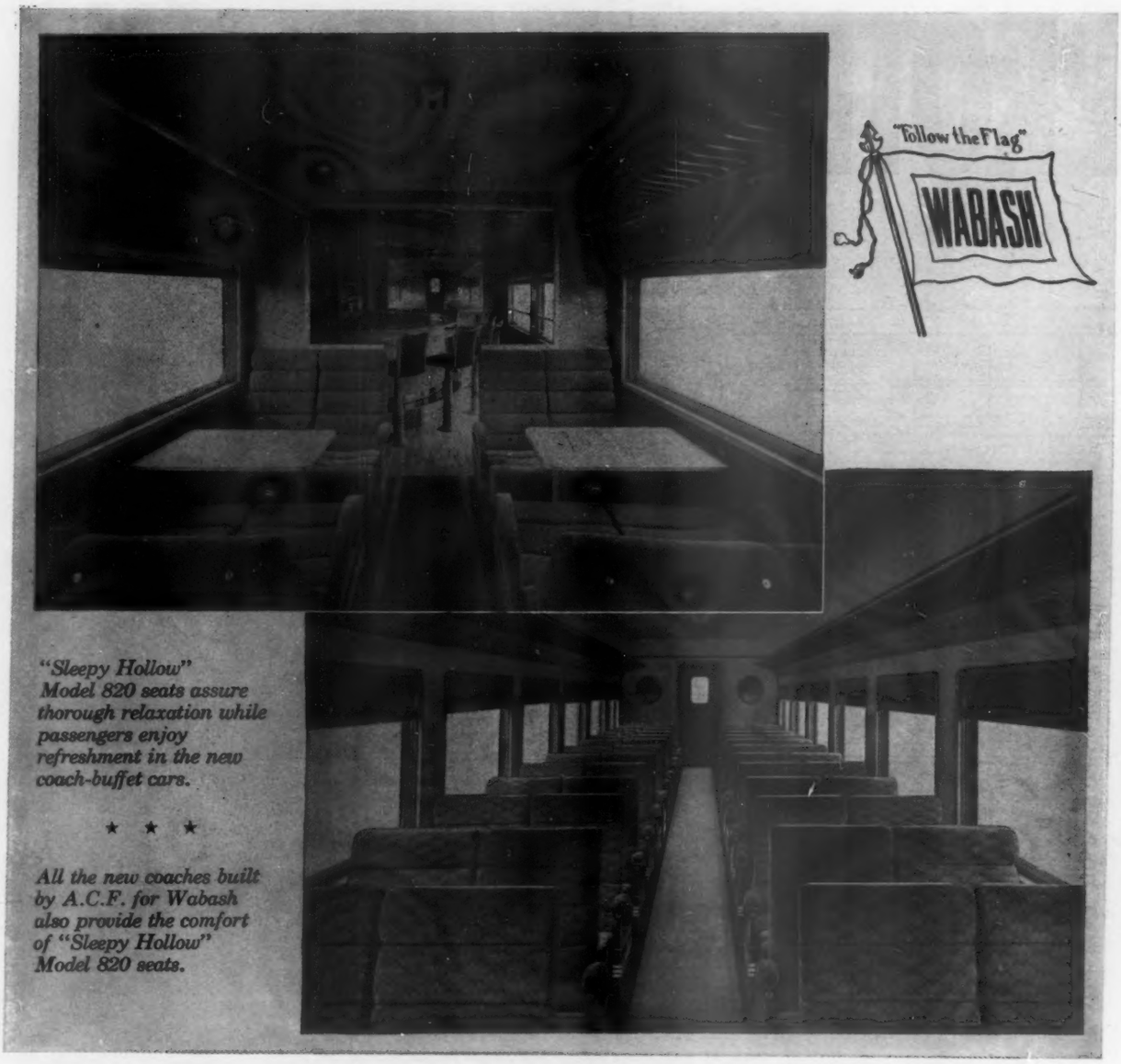
We don't have all the answers . . . but, we're trying hard to solve some of the overhead cost problems in the railroad kitchen . . . heart of train food service.

Each year COLONNA engineers spend many hours in "kitchens on wheels" . . . observing, inspecting, testing . . . talking with stewards, chefs . . . all with a view to improving train food service . . . PROBLEM CHILD of the railroads.

For your new car program or for remodeling—consult Colonna for more efficient food and beverage service equipment.

ANGELO COLONNA

WESTMORELAND & BOUDINOT STREETS
PHILADELPHIA 34, PENNSYLVANIA



"Sleepy Hollow" Model 820 seats assure thorough relaxation while passengers enjoy refreshment in the new coach-buffet cars.

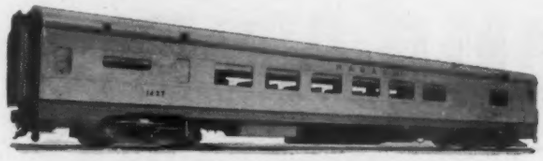
★ ★ ★

All the new coaches built by A.C.F. for Wabash also provide the comfort of "Sleepy Hollow" Model 820 seats.

NEW a.c.f. CARS MEAN *MORE* "Sleepy Hollow" COMFORT FOR WABASH PASSENGERS

THE CONSISTENCY with which "Sleepy Hollow" seats are selected for new Wabash equipment reflects their outstanding record for satisfactory service in previous installations, including the new "City of Kansas City" and other modern trains of the Wabash Railroad.

The growing number of repeat installations of Heywood-Wakefield seating gives convincing proof of its value for your modernization plans.

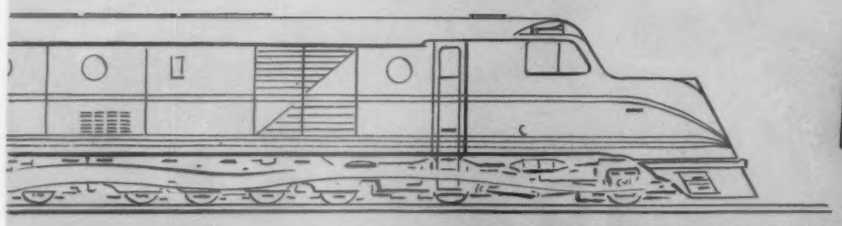


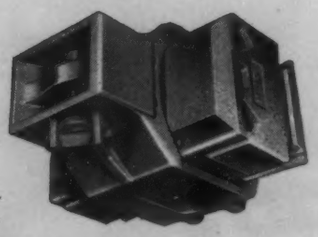
The modern lines of the new A.C.F. coaches and coach-buffet cars suggests the extra luxury they bring to Wabash patrons.

HEYWOOD-WAKEFIELD
127TH ANNIVERSARY

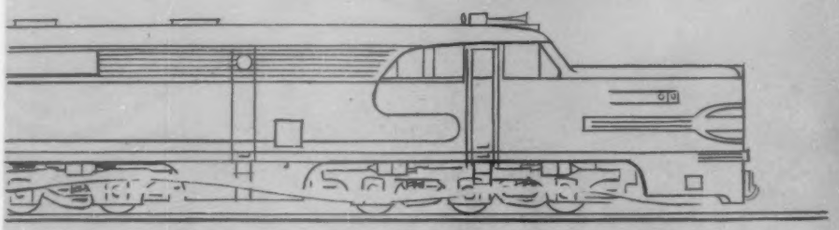
Transportation Seating Division
Gardner, Mass.

PROTECT EQUIPMENT

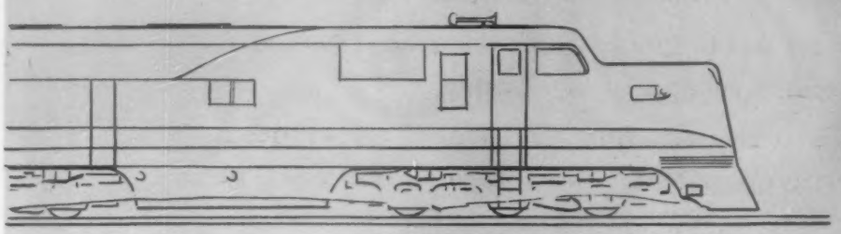


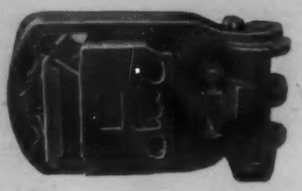


Type M-385 for extremely heavy diesel and electric freight locomotives.

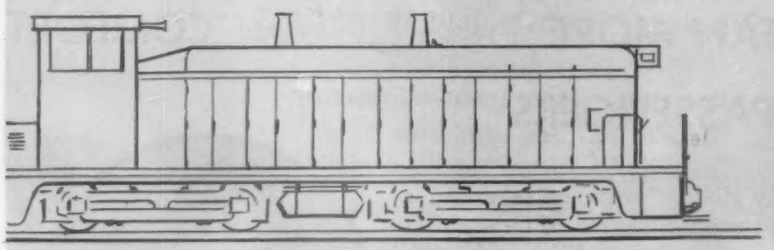


Type M-380 for heavy diesel passenger locomotives and diesel and electric freight locomotives.





Type M-350-A for diesel passenger locomotives.



Type M-375 for diesel switching locomotives.

NATIONAL MALLEABLE and STEEL

TRUCKS • COUPLERS • YOKES • DRAFT GEARS

railroad acceptance at new high for...

a.c.f STANDARDIZED DESIGNS

A 12-month check of a.c.f freight car orders received reveals that more than 70% were for a.c.f-developed Standardized design. It is obvious acknowledgment of progressive achievement in car building as pioneered by a.c.f

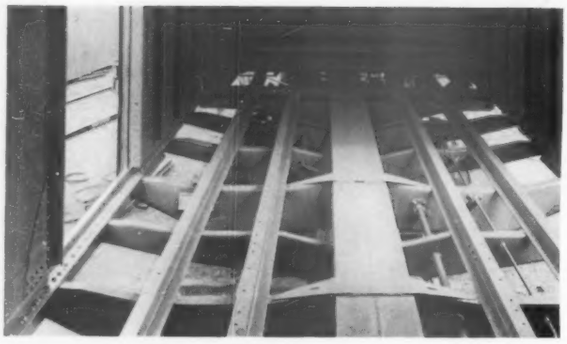
As a direct result of a.c.f Standardized Designs and assembly-line fabrication techniques, a.c.f-built freight cars offer the Railroads tangible advantage in operation and maintenance.

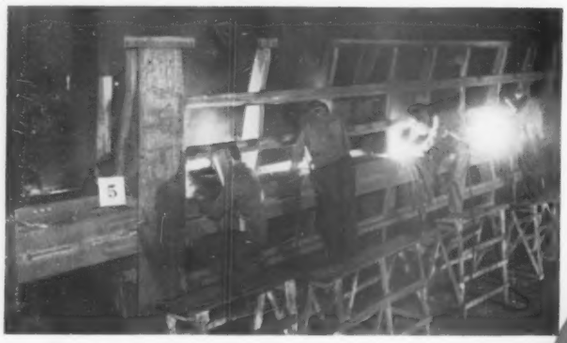
IT'S a.c.f STANDARDIZED DESIGN BY OVER 3 TO 1

Sales Ratio of a.c.f Standardized Design vs. Special Design—(Box Cars, Hopper Cars and Covered Hoppers)

See a.c.facts on Standardized Design

STANDARDIZED **WELDED BOX CARS**

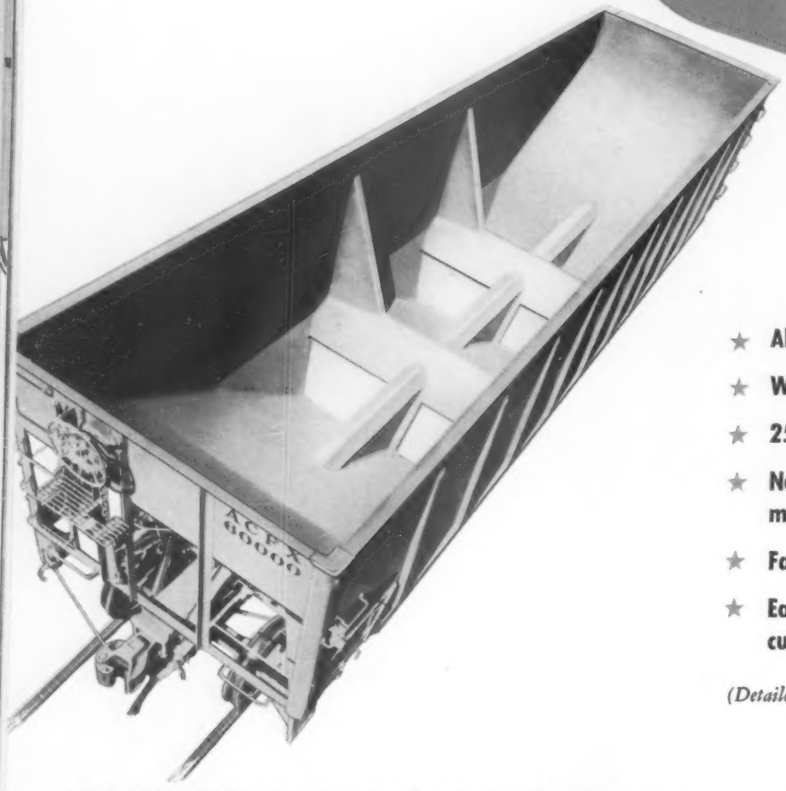




- ★ **All-welded for complete structural rigidity**
- ★ **a.C.f.-designed underframe provides continuous bolster-to-bolster stringers to insure level floors**
- ★ **All-welded a.C.f. center still, striker plate (forging) and draft lug assemblies for maximum unit strength**
- ★ **a.C.f. corrugated ends . . . and 10 posts per side for extra strength instead of 8**
- ★ **Permanently-tight riveted roof construction**

(Drawings available for detailed engineering inspection)

a.C.f. facts . . . . .



- ★ **All-welded for maximum structural rigidity**
- ★ **Weight saving construction . . . 1,000 to 3,000 lbs. per car**
- ★ **25% longer life expectancy**
- ★ **No crevices to corrode . . . every seam welded tight against moisture penetration**
- ★ **Faster dumping than ever before**
- ★ **Easier to repair with ordinary repair shop welding or flame cutting equipment**

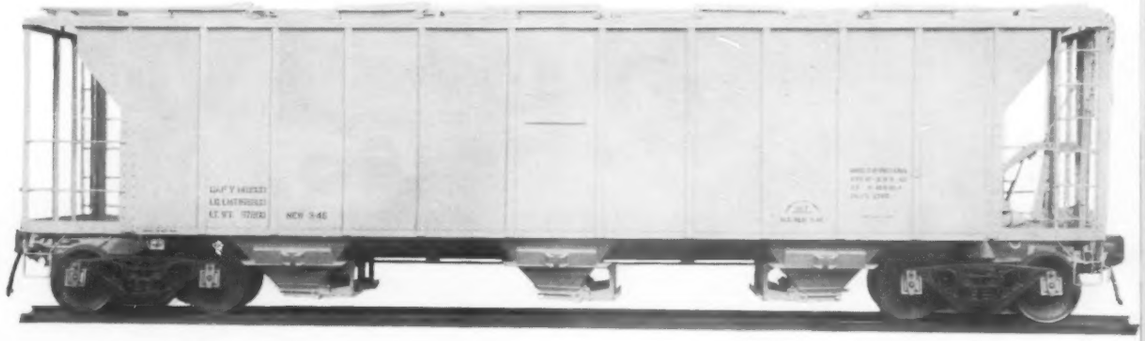
(Detailed construction data available)

STANDARDIZED **WELDED HOPPER CARS**

STANDARDIZED

COVERED HOPPER CARS

- ★ **Increased capacity for larger pay loads**
- ★ **Completely weather-proof construction**
- ★ ***Two or three* vented compartments for efficient, speedy unloading**
- ★ **Designed specifically for bulk commodities such as silica-gel, sulphur, hydraulic lime, etc.**



. . . ON STANDARDIZED DESIGN

- ★ **Welded for longer life, greater tonnage-dependability**
- ★ **Lighter, better, stronger**
- ★ **Standardized designs for *every* service**
- ★ **Assembly-line produced for fast deliveries**

OF COURSE, A.C.F. builds *all* types of freight cars. Those shown above are specific, outstanding examples of the engineering and production skills A.C.F. has applied in developing standardized designs for better structural integrity, more economical operation and less costly maintenance. An A.C.F. representative can give you complete details on how A.C.F. Standardized Design freight cars will meet *your* requirements and cut overhead and operating costs.

STANDARDIZED

WELDED TANK CARS

. . . . . .

STANDARDIZATION MAKES SENSE in PASSENGER CARS, too

▶ The acceptance of standardized designs by carriers and by the public is no freak occurrence. Both appreciate the economies inherent in establishing basic shop standards for efficient production.

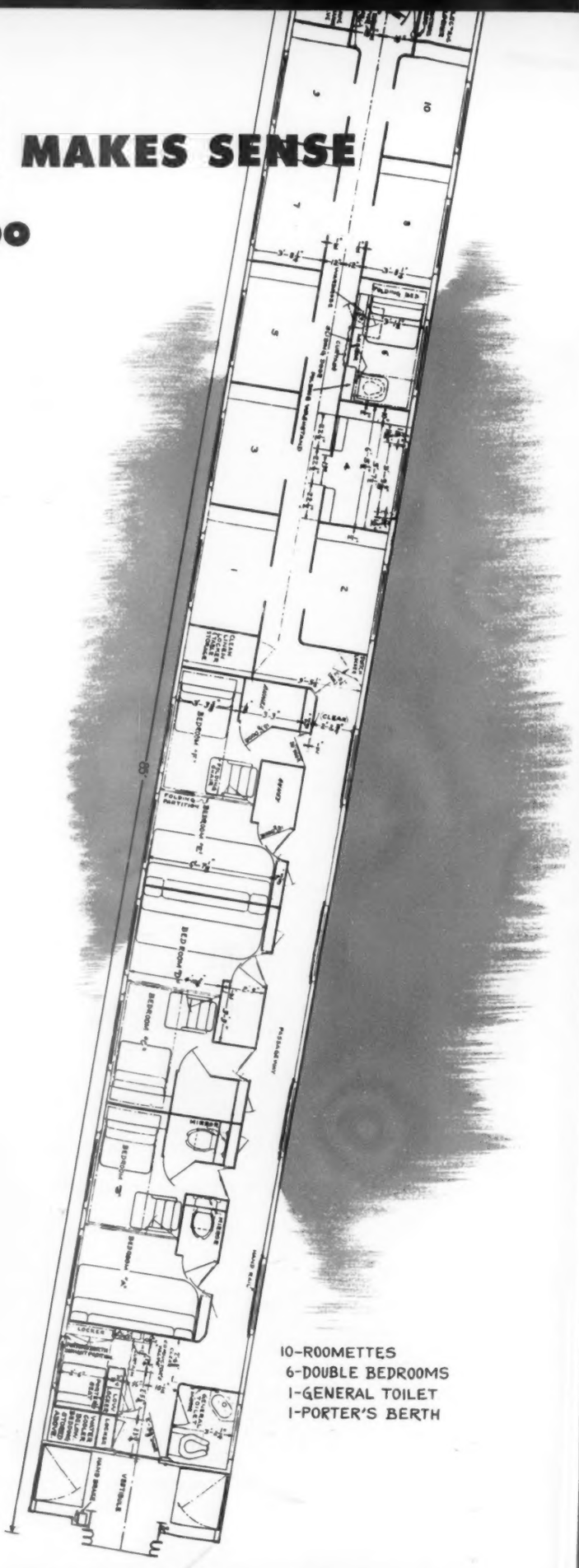
It is standardization that has made it possible for more people to own pleasure cars...more operators to own trucks, planes, busses...without sacrificing individual needs or desires.

Standardization of railway passenger cars permits full use of pre-fabricated sub-assemblies. It allows greater production speed and more practical utilization of skilled labor. It makes it possible for the equipment builder to plan ahead...to purchase supplies advantageously...to maintain a shop set-up in readiness to expedite deliveries...to produce at top efficiency...to reflect resultant savings in lower costs to the purchaser.

Consult an a.c.f. representative on all phases of your passenger car problems. Get the a.c.facts on

- ★ **Unitized construction**
- ★ **Assembly line production speed**
- ★ **Standardized floor plans**
- ★ **Complete flexibility of interior, exterior appointments**
- ★ **Simplified maintenance**
- ★ **Lower overall costs**

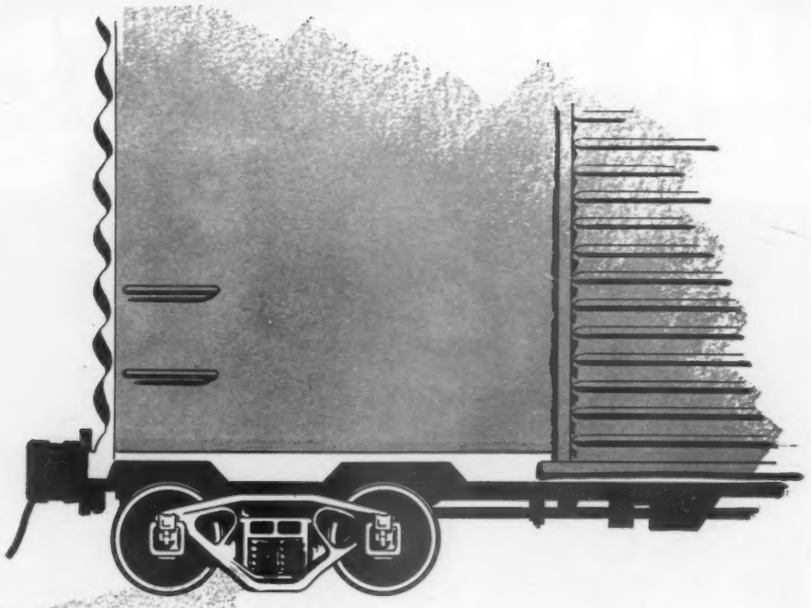
Standardized sleeper floor plans permit assembly line construction of roomette and bedroom units. These units are quickly installed in car shells with no need for tedious fitting or construction in cramped quarters.



a.c.f.

CAR BUILDERS TO AMERICA'S RAILROADS

American Car and Foundry Company, New York • Chicago
St. Louis • Cleveland • Philadelphia • Washington
Pittsburgh • San Francisco



Start here...

to get more pay from your pay-load

Long travel springs made by the Railway Steel-Spring Division cushion the pay-load in your freight car and insure a smooth, even ride. This saves you money as it helps reduce costly damage claims to a minimum.

Long travel springs also allow higher speeds that mean faster service and more profits for you from increased freight traffic. Other advantages include lower maintenance costs and longer life for your rolling stock and roadbed.

These features together with Alco's years of experience in spring design and engineering are your assurance of top performance and efficient service.

Always specify *"Railway" springs.* Call your Alco sales representative in New York, Cleveland, Chicago, St. Louis, St. Paul, San Francisco for more information.

Railway Steel-Spring Division

AMERICAN LOCOMOTIVE COMPANY

How much of this tax are YOU paying?

Eye accidents cost industry about 110,000,000 man hours in 1949 in *lost time* — and about $160,000,000 in dollars lost. What are YOU doing about it?

One large company installed an AO Eye Protection Program and practically eliminated lost man hours due to eye accidents. This company also reports a drop in compensation costs from a high of $2.80 to an average of $.40 per worker annually. Other companies report similar savings.

An AO Eye Protection Program pays off—pays for itself in six months time or less. Prove it to yourself. Call in an AO Safety Representative. He will show you how you can reduce or eliminate your share of industry's high eye accident tax.

American Optical Company
SAFETY PRODUCTS DIVISION

*Estimated lost man hours only. Does not include average cost of compensation which even for the low cost year of 1938 was $328.

Southbridge, Massachusetts • Branches in Principal Cities

IT DOES 'EM ALL!

Lifts 16-ft. Ties

Handles 90-lb. Rails

Grades Shoulders

Digs Post Holes

Pulls Freight Cars

Plows Snow

Loads and Unloads Cinders, Salt, Crushed Rock, etc.

LOOK UNDER THE HIDE Connecting rods for "Caterpillar" Diesels are made of medium carbon steel, drop forged and heat treated. Of "H" section design, they are rifle drilled to provide oil passage to the piston pin, and to oil-cool the piston. Connecting rods are balanced to close limits. Crankpin bearings are solid aluminum alloy, precision type. Piston-pin bushings are bronze and are precision bored. Look under the hide for built-in quality.

CATERPILLAR

REG. U. S. PAT. OFF.

DIESEL ENGINES • TRACTORS • MOTOR GRADERS
EARTHMOVING EQUIPMENT

YOU'RE looking at a rig that does a lot of different jobs fast and well. On the front, this "Caterpillar" D6 Tractor is equipped with a 'dozer. On the rear, it has a Hystaway Dragline used with a ⅜ bucket, ⅜ clamshell or grappling tongs. That's a 3,300-lb. boom under the trolley. Twelve months a year this versatile rig is kept busy on 130 miles of track for the W.C.F. & N. R.R., Waterloo, Iowa.

"We use it for everything," says Nathan B. Barber, Construction and Maintenance Engineer. "Originally it was purchased for ditching, but soon lots of other uses were found for it. When a train comes, we can get right off the track—and then get right back on again. We have plowed snow from Waterloo to Cedar Falls and back. The 'Cat' D6 has given us good service with low fuel consumption."

You'll hear many reports like this about "Caterpillar" equipment on the right of way. Time after time, it's proved its worth by slashing the cost and time of maintenance and construction. The ruggedness *built into* every unit assures you dependable performance with a minimum of down-time. And that's mighty important these days with the vital need for keeping things moving for civilian and defense requirements. Your "Caterpillar" dealer is close by, equipped to provide efficient parts and repair service. With conditions as they are, it's a good move to talk over your machinery requirements *now*.

CATERPILLAR TRACTOR CO. • PEORIA, ILLINOIS

"Pine Tree" design by **Goodall Fabrics**
created for Great Northern's "International"

The "International"—a crack Great Northern streamliner with cars by American Car and Foundry Company.

Where durability and luxury are the keynote – Goodall Fabrics are preferred

THE DESIGNERS of Goodall Fabrics are prepared to help you create a special pattern . . . symbolizing the close relationship between your road and the passengers it serves. And, in addition, Goodall Fabrics are *Blended-for-Performance.* The result is the perfect combination of different fibers, each chosen for its special qualities—durability, beauty, ease of cleaning. These explain the exceptional good looks and amazingly long wear of Goodall Fabrics . . . and their wide acceptance for railway transportation where long-range economy is as important as passenger approval.

Goodall Fabrics
Subsidiary of Goodall-Sanford, Inc.
THE FINEST NAME IN FABRICS

GOODALL FABRICS, INC. • NEW YORK • BOSTON • CHICAGO • DETROIT • SAN FRANCISCO • LOS ANGELES

C-C RAIL Contains . .

HIDDEN DEFECTS!

Transverse Defects Found by Sperry Rail Cars

Most railroads now include testing of CC rail in their rail testing programs because transverse defects have not been eliminated in CC rail.

Although CC rail has largely eliminated one type of defect, the transverse fissure; it has not eliminated other equally dangerous types of transverse defects, notably detail fractures.

Table 1. Defects detected in CC rail — March 1 to Aug. 31, 1950

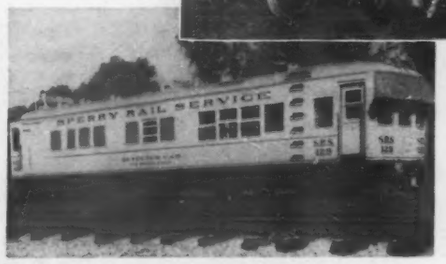
TYPE OF DEFECT	NO. OF DEFECTIVE RAILS	MILES PER DEFECT	% OF TOTAL
Transverse Defect *	2137	10.87	96
Horizontal Split Head	34	660	2
Vertical Split Head	26	860	1
Miscellaneous	12	1850	1
TOTAL	2209	10.52	100

* Including Engine Burn Fractures

Table 2. Size of Transverse Defects * detected in CC rail

SIZE	NO. OF DEFECTIVE RAILS	MILES PER DEFECT	% OF TOTAL
Small (0-20%)	1684	13.8	84
Medium (21-40%)	174	133	9
Large (over 40%)	44	525	2
Cracked Out	97	240	5
TOTAL	1999	11.6	100

* Excluding Engine Burn Fractures



CC RAIL TESTED WAS 26% OF THE TOTAL MILEAGE TESTED FROM MARCH 1 TO AUGUST 31. DEFECTS DETECTED WERE 12% OF TOTAL DEFECTS IN TOTAL TESTED MILEAGE.

Sperry

FIRST IN RAIL TESTING

SPERRY RAIL SERVICE

Division of Sperry Products, Inc.

DANBURY, CONNECTICUT

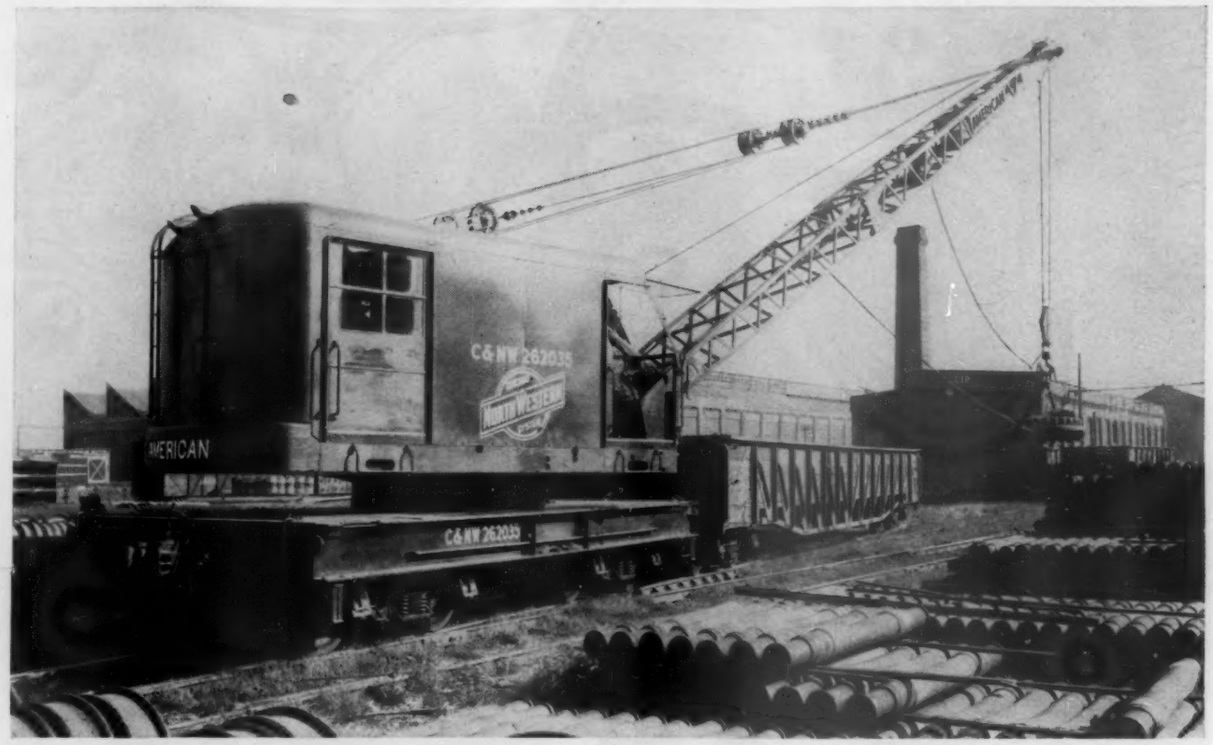
110 E. 42nd STREET, NEW YORK 17, N. Y.

80 E. JACKSON BLVD., CHICAGO, ILL.

818 OLIVE STREET, ST. LOUIS 1, MO.

WAY AGE

Saves 79% on fuel



FUEL cost for this 30-ton American Diesel crane averages about $1.40 a day. The steam crane it replaced used $6.60 worth of coal a day. For the Chicago & North Western Ry., that's a mighty important yearly saving—*on fuel alone.*

But that isn't all. Higher speed enables the American Diesel to load two more cars of scrap a day than the steamer ever could. And it saves three stops the steam crane made each day for fuel and water.

If you have ancient steam cranes eating up your profits, why not check and mail the coupon below.

Modernize...economize...with

American Hoist & Derrick Company

ST. PAUL 1, MINNESOTA

Mail this coupon

69 **American Hoist & Derrick Co.** 1601
St. Paul 1, Minnesota

● Please send literature on
AMERICAN LOCOMOTIVE CRANES

Capacity_____ ☐ Diesel ☐ DiesELectric

Name_____

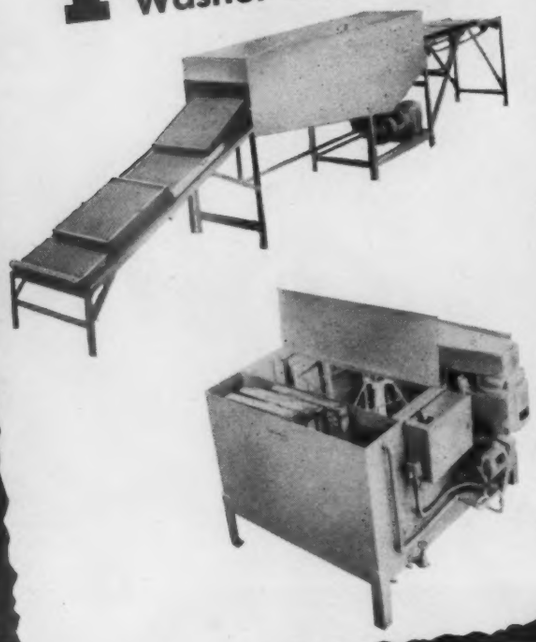
Company_____

Address_____

City_____ State_____

TWO SOLUTIONS for your AIR FILTER MAINTENANCE PROBLEMS

1 FAR-AIR* Utility Washer and Oiler



2 FAR-AIR* Automatic Washer and Oiler

You can cut your filter maintenance costs as much as 67% by using one of the FAR-AIR Filter Washer and Oiler units. These units have been widely accepted by railroads because of their speed and efficiency in servicing impingement-type air filters.

If you service as few as 50 filters per day, the FAR-AIR utility unit will pay for itself in one year in maintenance savings. The FAR-AIR Automatic unit will pay for itself in one year if 200 filters per day are serviced.

These units guarantee thorough cleaning and positive oiling of all types of viscous, impingement panel filters . . . permit immediate use of the filters after servicing...add to filter service life...eliminate dependence on operator's skill or judgment...pay for itself quickly by reducing maintenance man-hours.

Investigate now. Details on request.

*Trade Mark Reg.

herringbone- FAR-AIR FILTERS "Better by Farr" *-corrugations*

FARR COMPANY *Manufacturing Engineers*

Los Angeles • Chicago • New York

Mf'd under license by Control Equipment Co., Ltd., Montreal, Canada.

DOES YOUR COST-ACCOUNTING SYSTEM

TELL THE WHOLE TRUTH

ABOUT FLOOR FAILURES?

CAREFUL ANALYSIS WOULD SHOW
THAT REPEATED REPAIRS COST
YOU *MORE* THAN

NAILABLE STEEL FLOORING

When you compare the first cost of NAILABLE STEEL FLOORING with that of other flooring, it's well to remember the old adage, "It isn't the *first* cost—it's the upkeep!" Then compare the long-run advantage of NAILABLE STEEL FLOORS with other floors. If your cost-accounting system could provide you with the whole truth on floor failures—what they cost for maintenance and repairs, for freight claims, and for loss of loaded-car-miles—you would find that the old adage about upkeep applies today to freight-car flooring.

Designed to do a better job, NAILABLE STEEL FLOOR costs more originally than a wood floor—but its first cost is well justified. N-S-F's channel construction, made with N-A-X HIGH-TENSILE steel, provides high structural strength. There just aren't any breakthroughs—even when it is subjected to concentrated loads imposed by heavy fork-lift trucks or pounded by normally rough clamshell and magnet loading that quickly ruins other types of flooring.

Further information on NAILABLE STEEL FLOORING is available from sales representatives in Detroit, Chicago, Philadelphia, St. Louis, Atlanta, San Francisco.

▲ Because NAILABLE STEEL FLOORS in gondolas are suitable for *all* kinds of freight, they increase efficiency in car use and thereby effect important operating economies.

▶ Boxcars with NAILABLE STEEL FLOORING are proof against breakthroughs, even under the concentrated load of fork-trucks and their heavy freight. Whatever load is offered, a NAILABLE STEEL FLOORED boxcar can take it.

GREAT LAKES STEEL CORPORATION

Steel Floor Division, Ecorse, Detroit 29, Michigan

PRODUCER OF NAX

PATENTS PENDING

N-S-F HOLDS BLOCKING BETTER

A GREAT LAKES STEEL PRODUCT

NATIONAL STEEL CORPORATION

NATIONAL STEEL


A clear track to more traffic
The opportunity for greater volume business is open today to all railroads. Current high levels of freight traffic prove it. But this opportunity cannot be fully realized if your road is hamstrung by outworn or obsolete equipment . . . freight cars that cost too much to keep rolling or pile up too much time in the shop.
That's why, when you're considering car replacement, it pays to remember Pressed Steel Car Company. Years of experience are behind every custom-built or standard Pressed Steel Car. Box cars, refrigerator cars, gondola or hopper cars—all are engineered for maximum operating efficiency and economy. Your operating figures will prove it.
PSC
PRESSED STEEL CAR COMPANY, INC.
6 NO. MICHIGAN AVE., CHICAGO 2, ILLINOIS
FIRST
all steel hopper car 1897
FIRST
all steel box car 1914
FIRST
UNICEL 1950

GM Diesels are the best railroad security

WHERE THAT EXTRA 1½¢ per day pays off!

The premium you pay for WAUGHMAT TWIN-CUSHION premium car and lading protection is estimated to be less than 1½¢ per day per car . . . a small charge for the car and lading insurance provided by Waughmat Twin-Cushions.

LADING damage in transit is the rare exception when the cars are cushioned against longitudinal shocks with WAUGHMAT TWIN-CUSHIONS. This fact has been convincingly demonstrated in millions of miles of symbol and stock-car service and in coast to coast tests. WAUGHMAT TWIN-CUSHIONS, comprised of a series of rubber plates, have no solid point. Twin-Cushions take the bite out of impact, provide protection to cars and lading against most of the excessive impacts of switching and transit.

Reducing the force and frequency of longitudinal shocks, Twin-Cushions lessen component lateral shocks and *halve* those component vertical vibrations that are most destructive of lading.

Providing velvet-smooth cushioning in pull and in buff, WAUGHMAT TWIN-CUSHIONS allow the absolute minimum of uncontrolled movement*,...added lading protection when cars are rolling. Trains start and roll more smoothly with less surging when cars are Twin-Cushion equipped.

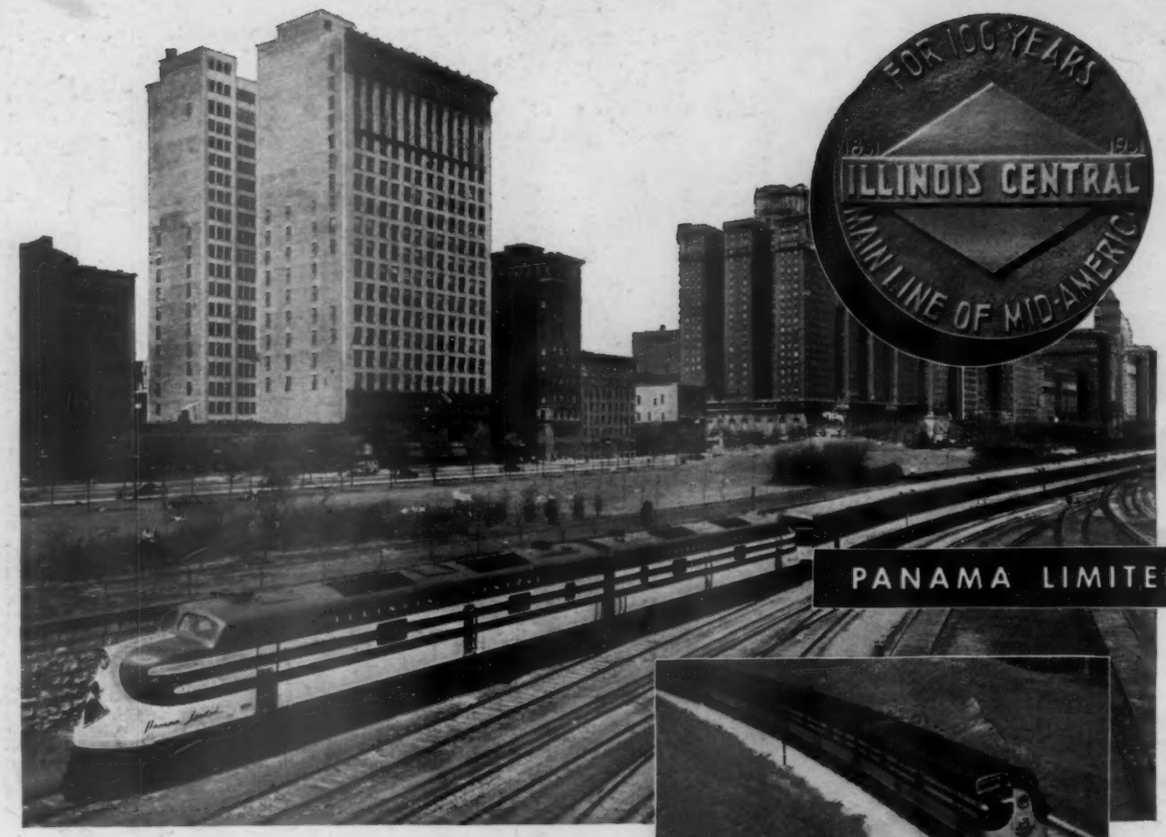
To reduce lading damage, to extend the useful life of cars for years, to protect them against frame-wracking, sill cracking impacts and much lesser damage, specify Double Action WAUGHMAT TWIN-CUSHIONS for new or existing cars.

*only the play between coupler connections.

WAUGHMAT *Twin Cushions*

TRADE MARK REGISTERED

WAUGH EQUIPMENT COMPANY, New York • Chicago • St. Louis • Canadian Waugh Equipment Company, Montreal



PANAMA LIMITED

CITY of MIAMI

two pioneers meet!

CITY of NEW ORLEANS

The ILLINOIS CENTRAL . . . a pioneer in the development of our great Midwest and South . . . is rounding out its first hundred years of distinguished service. Ever since there was a Waukesha Ice Engine, the IC has used it on their streamlined fleet of famous name trains. The IC traverses a wide range of climate in a single run—between two great temperature extremes —in Chicago and in New Orleans. Yet IC passengers ride in complete air conditioned comfort—created by Waukesha engine-driven equipment that automatically and instantly responds to any and all demands.

Entirely independent of locomotive, train movement, car location, or standby facilities—Waukesha railway car units insure dependable air conditioning . . . anytime . . . anywhere. Are *you* planning new equipment? Send for Bulletin 1496.

GREEN DIAMOND

RAILWAY DIVISION

WAUKESHA MOTOR COMPANY, WAUKESHA, WIS.

Largest builders of mobile engine-driven Refrigeration and Generator Equipment

109

WAUKESHA

Standard **PRODUCTS**

...imitated but not equalled!

because Standard has developed the *best* designs and is the *largest* mass producer of freight car parts.

Industry finds it economical to purchase parts requiring expensive facilities for mass production from sources specializing in those parts.

Naturally, Standard's products are used by all builders of cars.

Standard RAILWAY EQUIPMENT MANUFACTURING COMPANY

310 SOUTH MICHIGAN AVENUE CHICAGO 4 • 247 PARK AVENUE NEW YORK 17

ON MET-L-WOOD (METAL BONDED TO PLYWOOD) USES

MAJOR manufacturers of diesel locomotives use Met-L-Wood doors and exterior side panels for the same reasons, listed at right, that make Met-L-Wood the ideal construction material for many additional railroad uses. Interior panels, bulkheads, heading, wainscoting, doors, luggage shelves, cabinets, table tops, baggage-car messenger accommodation units... All gain beauty, strength and utility when they are made lighter with Met-L-Wood.

Met-L-Wood versatility extends to the materials from which it is made. A large variety of woods, metals, thicknesses and finishes are available in stock sizes and units; or prefabricated to most exacting specifications. Write for 12-page Bulletin, describing Met-L-Wood possibilities fully.

These are the Advantages of MET-L-WOOD for Railroad Uses

- **WEIGHT SAVINGS** with Met-L-Wood are as high as 73% over steel construction of equal strength!
- **STIFFNESS** of Met-L-Wood Type 2P2-3/8" thickness is the same as that of solid steel plate 1/4" thick!
- **INSULATION and SOUND-DEADENING** qualities of Met-L-Wood cut costs and deadweight still further by making less insulation material necessary.
- **INHERENT BEAUTY** of Met-L-Wood's smooth, tough surfaces adds aesthetic value to rugged durability.
- **FAST ASSEMBLY** of prefabricated Met-L-Wood doors and panels cuts manufacturing costs without sacrificing quality. Standard Met-L-Wood sections can be formed, sawed, tapped, drilled, brazed or soldered without special tools or skills.

MET-L-WOOD CORPORATION

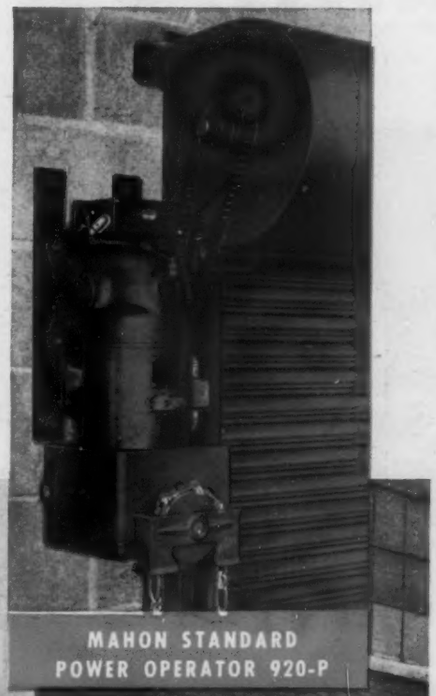
6755 West 65th Street, Chicago 38, Illinois

MET-L-WOOD • *STRONG... LIGHT... Smooth Finish... Sound Deadening... Fire-Resisting... Insulating*

Rolling Steel DOORS

Manually, Mechanically, or Power Operated

When selecting doors for industrial or commercial buildings, particularly for shipping openings, your first considerations should be economy of space, permanence and reliability . . . opening and closing speed is also important, not only because it affects heating costs, but from a standpoint of time-saving door efficiency in daily operation. The quick opening, quick closing rolling steel door provides all of these desirable features . . . open or closed it occupies no usable space inside or outside the opening . . . its all-metal construction provides permanence and maximum protection, and its simple vertical action assures a lifetime of continuous trouble-free service. If you buy Mahon Rolling Steel Doors, you can rest assured that you will get the finest materials, finest workmanship, and the latest developments in doors of this type. Comparison will convince you. See Sweet's Files for complete information including specifications, or write for Catalog G-50.



MAHON STANDARD
POWER OPERATOR 920-P

THE R. C. MAHON COMPANY

Detroit 34, Michigan • Western Sales Division, Chicago 4, Illinois

Representatives in all Principal Cities

Manufacturers of Rolling Steel Doors, Grilles, and Automatic Closing Underwriters Labeled Rolling Steel Doors and Fire Shutters; Insulated Metal Walls, Steel Deck for Roofs, Partitions, Acoustical Ceilings, and Permanent Concrete Floor Forms.

ROLLING STEEL DOORS, SHUTTERS AND GRILLES TO MEET EVERY REQUIREMENT

Typical installation of Two Power Operated Mahon Rolling Steel Doors in two double-truck openings to an enclosed shipping dock. These doors are 22 Ft. x 14 Ft. and are operated by remote push-button controls.

MAHON

More cars and with fewer

500 IN 1945

Five hundred of these drop-bottom gondolas were built of high strength steels by Pressed Steel Car Co. in 1945.

200 IN 1949

High Strength steels were also used to construct two hundred additional cars of same design and weight in 1949. American Car & Foundry was the builder.

500 MORE IN 1949

Because of the excellent performance of the earlier cars, Great Northern placed orders for five hundred additional drop-bottom gondolas. Constructed principally of U·S·S COR-TEN these were built by Pullman-Standard.

High Strength Steel used here mainly to minimize maintenance saves steel tonnage as well

In the 1200, 50-ton drop-bottom gondolas built for Great Northern the main objective was not reduction of weight but rather, long life and low maintenance cost.

However, the use of all-welded high strength steel construction not only added the required extra strength and durability but at the same time reduced body weight 5174 lb. per car. This represents a total saving of 3096 tons of rolled steel on these three orders, enough to build 287 additional car bodies of the same type and size.

better cars
tons of better steel

Use Steel that does more...
Build with U·S·S COR-TEN

MORE freight cars are badly needed. In the present emergency—and for tomorrow's even greater anticipated demand—freight cars *must* be provided.

The situation is not good. Present supply is about 40,000 less than a year ago.

With the expansion of our defense effort the need for more freight cars is certain to increase. And, the need for more steel will continue. That's why it is imperative for the railways and car builders to make the tonnage of steel available to them go as far as possible. It can be done by building with U·S·S COR-TEN.

You can help to beat the steel shortage

You can make the available steel supply go further—simply by taking advantage of U·S·S COR-TEN's greater strength and greater resistance to atmospheric corrosion.

By using U·S·S COR-TEN in lighter sections in place of heavy carbon steel, the weight of rolled steel in your freight cars can be substantially reduced . . . often as much as 25%.

Such savings in steel make it possible for you to get more car parts—and more cars—from the same number of tons of steel. A saving of 25%, for example, means not just 25% more car parts but 33% more. In other words, without using more steel but by using steel that does more you can get a *bonus* production from your steel supply—you can put many more cars into service.

And they'll be *better* cars. Because they weigh less, these "steel-saving" COR-TEN cars can carry additional payload in place of useless deadweight. Fewer cars will be required to haul a given amount of freight. And because U·S·S COR-TEN is stronger, tougher, more resistant to shock and atmospheric corrosion, these COR-TEN cars will stand up better, will require less maintenance.

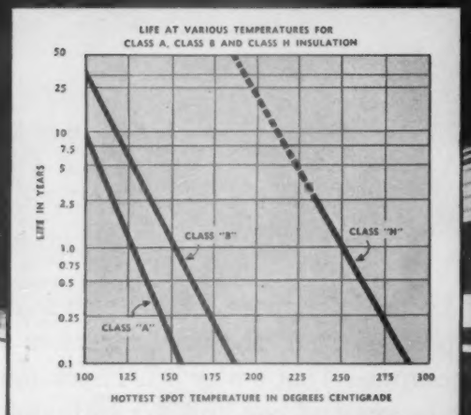
AMERICAN STEEL & WIRE COMPANY, CLEVELAND · COLUMBIA STEEL COMPANY, SAN FRANCISCO
NATIONAL TUBE COMPANY, PITTSBURGH · TENNESSEE COAL, IRON & RAILROAD COMPANY, BIRMINGHAM · UNITED STATES STEEL COMPANY, PITTSBURGH
UNITED STATES STEEL SUPPLY COMPANY, WAREHOUSE DISTRIBUTORS, COAST-TO-COAST · UNITED STATES STEEL EXPORT COMPANY, NEW YORK

USS

U·S·S HIGH STRENGTH STEELS

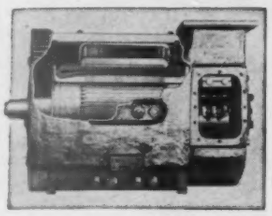
UNITED STATES STEEL

DOW CORNING SILICONE INSULATION* multiplies the life and reliability of Diesel-Electric Traction Motors



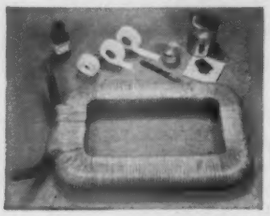
Accelerated life testing and numerous field reports prove that motors insulated with Dow Corning Silicone (Class H) insulation have at least 10 times the life and wet insulation resistance of Class B motors under comparable service conditions.

***made with DC Silicone Resins and Varnishes.** All of the major manufacturers of diesel-electric traction motors are now protecting armatures with resinous silicone insulating materials. One progressive manufacturer has been using Class H insulating materials made with Dow Corning Silicone for over three years. This is a typical service record for traction motors rebuilt with silicone insulation. The field coils were still in perfect condition after more than 500,000 miles in freight service. The motor was returned to passenger service where it is still in operation after another 250,000 miles.*



***made with SILASTIC[1] TAPE, Type R**

These semi-vulcanized Silastic coated glass tapes are easier to apply and form a longer lasting outer jacket than any other kind of insulating material available for traction motor field coils. Silastic Tape, Type R, vulcanizes to form a continuous void-free jacket that is stable at Class H temperatures, resilient, moisture proof, and highly resistant to oil and to both mechanical and electrical fatigue. Over 1600 Silastic Tape, Type R, insulated main and interpole field coils are now in service on diesel-electric traction motors. The cost is comparable to Class B coils; life expectancy is in the range of 10 to 1.



[1] T.M. Reg. U. S. Pat. Off.

for more information on Dow Corning Silicone Electrical Insulation Materials, write Dept. LC.

DOW CORNING CORPORATION · MIDLAND, MICHIGAN

Dow Corning
FIRST IN SILICONES

ATLANTA • CHICAGO • CLEVELAND • DALLAS • LOS ANGELES • NEW YORK CITY • WASHINGTON, D. C.

No Marking Job's Too Tough-

FOR *OLD FAITHFUL *AMERICAN MARKERS

ONLY a crayon that is highly specialized can do a competent marking job! Because all Old Faithful "American" Markers are job-fitted for a specific purpose, you can rely on them to produce clear, accurate markings *under any conditions!*

NAME YOUR SURFACE!

metal — wood — paper — glass — fabric — leather — rubber — stone
hot — cold — glazed — coated — uncoated — smooth — rough

NAME YOUR PURPOSE!

identifying — checking — pricing — mailing — grading — routing — shelving — warehousing

TEMPORARY • SEMI-PERMANENT • PERMANENT

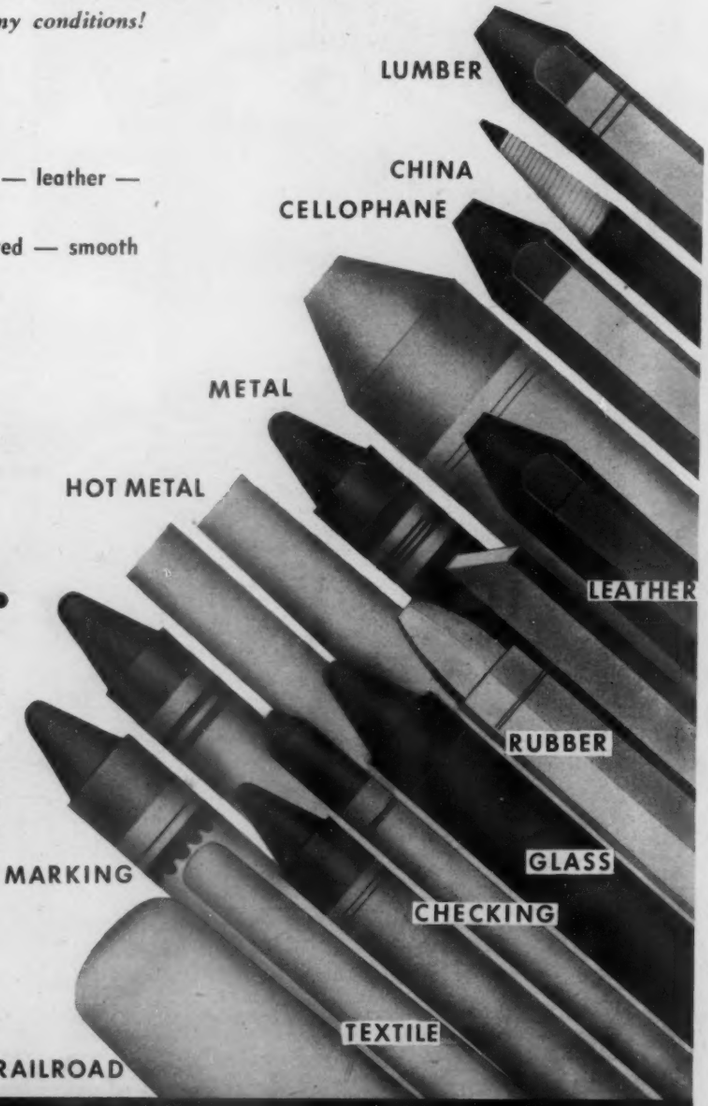
YOU ARE SURE TO FIND A MARKER MEETING YOUR REQUIREMENTS IN THE OLD FAITHFUL LINE OF SPECIALIZED MARKING CRAYONS

Our experienced and efficient Research Department is available to you for all your identification and marking problems. Consult your Old Faithful representative or write direct. Dept. RA-1.

FREE!

Send for the Industrial Crayon Guide, describing in detail the complete Old Faithful Marking Line. Dept. RA-1.

*Reg. U. S. Pat. Off.



The **American Crayon** Company Sandusky, Ohio New York

This is the Rule

INTERCHANGE RULES EFFECTIVE JANUARY 1, 1950,
SUPPLEMENT NO. 1, JULY, 1950

RULE 3

(b) (1-b) Brake beams, A. A. R. Standard No. 18, required on all cars built new or rebuilt on or after January 1, 1951, except that higher capacity beams may be used where braking conditions require them. In interchange.

NOTE.—New brake beams applied in repairs to any car on or after January 1, 1951, must be A. A. R. Standard No. 18 beams, except where higher capacity beam is standard to car.

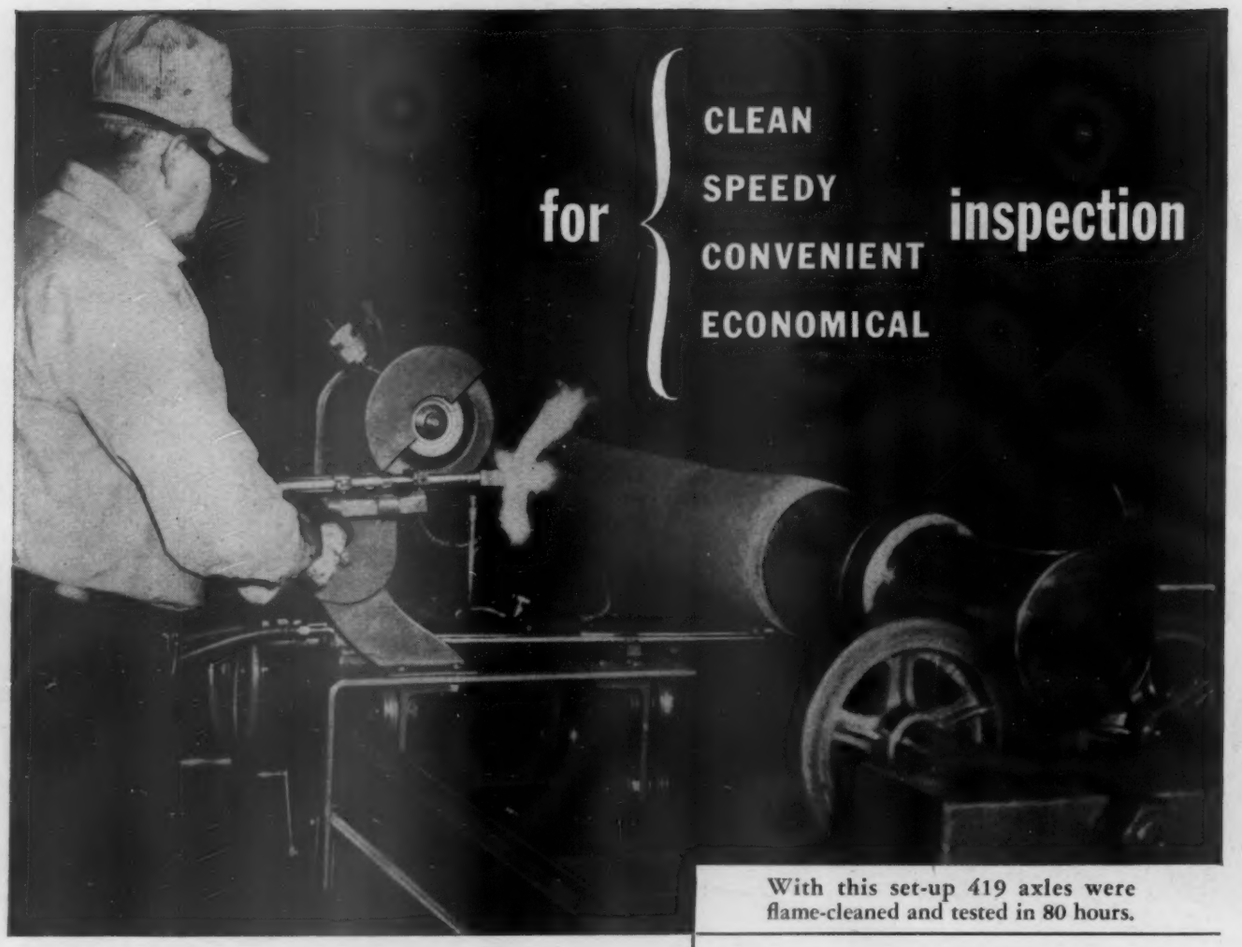
This is the brake beam

Make it your rule to buy

"POSITIVE" beams

CHICAGO RAILWAY EQUIPMENT CO.

McCormick Building, Chicago



With this set-up 419 axles were flame-cleaned and tested in 80 hours.

use Flame-Cleaning
on Car Axles

Flame-cleaning followed by wire-brushing fully removes all scale, rust, oxides, oil, grease, cement, paint, or white lead from car axles.

This gives you a clean axle surface that makes for reliable results in the magnetic particle tests required under A. A. R. interchange rules.

OXWELD can help you plan flame-cleaning procedures and mechanisms to make the operation practically automatic. Write for further information.

✓✓ Double check these important advantages of flame-cleaning.

Clean Removes surface impurities without corrosive baths or rinses.

Speedy Less than five minutes required to flame-clean and wire-brush one axle.

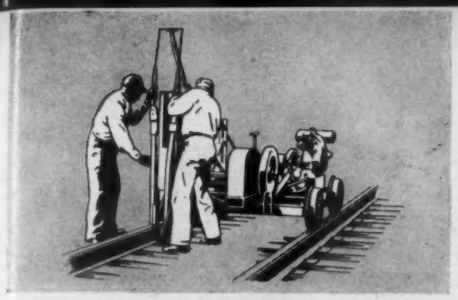
Convenient Cleaning, wire-brushing, and testing done at one location with a minimum of axle-handling.

Economical Flame-cleaning reduces cost of materials and manpower.

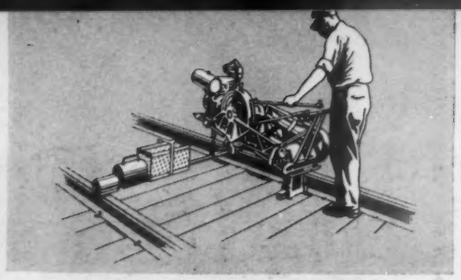
OXWELD RAILROAD SERVICE DIVISION
Union Carbide and Carbon Corporation
UCC
Carbide and Carbon Building Chicago and New York
In Canada:
Canadian Railroad Service Company, Limited, Toronto

OXWELD RAILROAD SERVICE

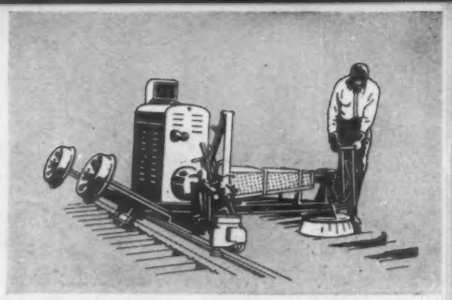
SINCE 1912—THE COMPLETE OXY-ACETYLENE SERVICE FOR AMERICAN RAILROADS



SPIKE PULLER . . . **By getting spikes out faster this machine speeds up relaying and reduces the cost of the entire operation.**

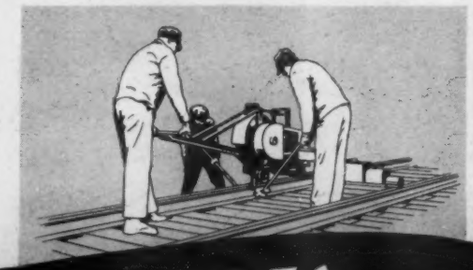


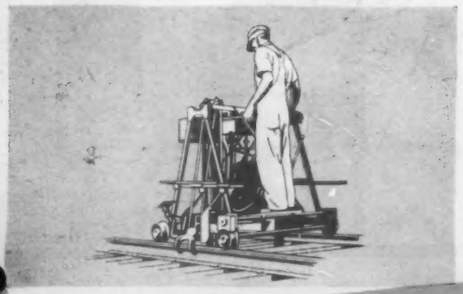
TRACK WRENCH . . . **Provides uniformly controlled tightening on track bolts to prolong rail life and make better riding track.**



ADZING MACHINE . . . **Provides tie seats in keeping with today's track maintenance standards. All level and in same plane.**

SPIKE HAMMER . . . **All spikes driven straight and at big savings in time and money.**





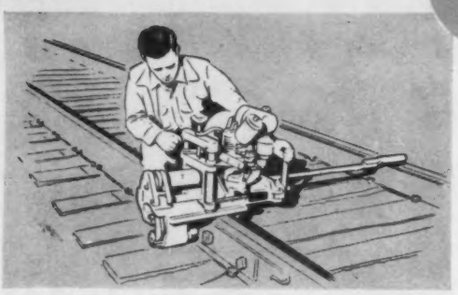
POWER JACK . . . **Maintain alignment while speeding up ballasting and general surfacing operations.**

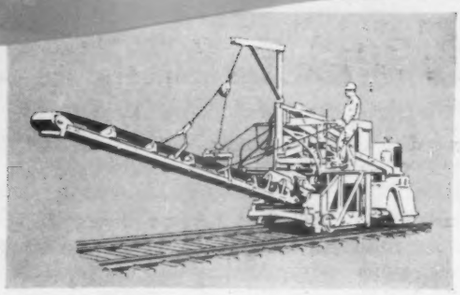
Again in 1951...

You'll get Better—Faster MAINTENANCE *at* LOWER COST *with* NORDBERG Track Maintenance Machinery

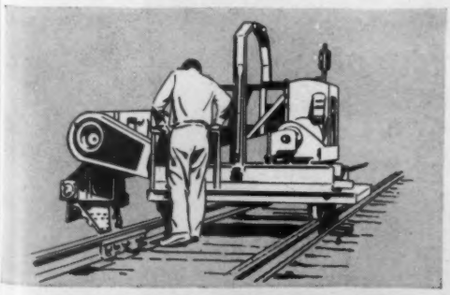
FOR a quarter of a century, Nordberg has been foremost in the development of machinery to meet specific requirements of track maintenance. These years of experien have resulted in vastly improved maintenance methods in scores of operations formerly done by hand . . . doing the better, faster and at lower cost. It will pay you to investigate the advantages of Nordberg time and money saving Track Maintenance Machinery. Ask for literature describing these Nordberg machines.

RAIL DRILL . . . **A compact, lightweight, low-cost, easily set drill that proves a money saver.**



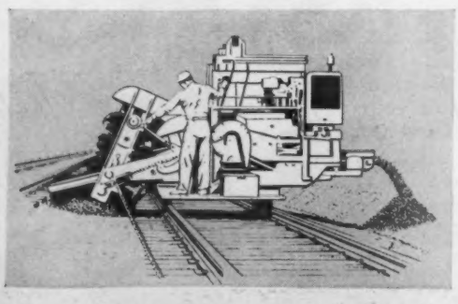


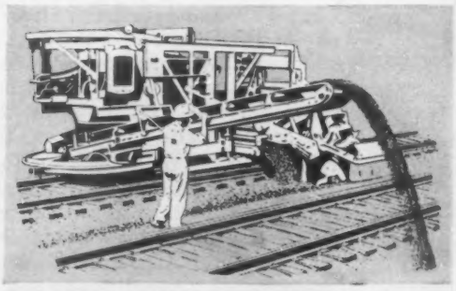
DSL YARD CLEANER . . . **Cleans more track faster, better, more economically . . . without damaging ties.**



CRIBEX . . . **Removes material contained in the cribs and deposits it beyond the ends of the ties.**

BALLASTEX . . . **Excavates the ballast in area between tracks or in shoulder. Disposes of it by wasting or by feeding to SCREENEX for cleaning.**





SCREENEX . . . **Takes excavated fouled ballast fed by BALLASTEX, cleans material and returns it to track, intertrack, or shoulder.**

Look to NORDBERG

. . . for continually improved TRACK MAINTENANCE MACHINERY
to do a Better, Faster Maintenance Job at Lower Cost

NORDBERG MFG. CO., Milwaukee 7, Wisconsin

Railroads Are Cutting Maintenance Costs Stopping Destruction by Rust

Rust, major cause of depreciation, is stopped, and life of equipment and structures lengthened when you use RUST-OLEUM.

When you use RUST-OLEUM, durable, reliable protection is assured for rolling stock, metal buildings, bridges, towers, tanks, signal equipment — adding years to the usefulness of *any rustable* railroad property.

Cut Your Maintenance Cost

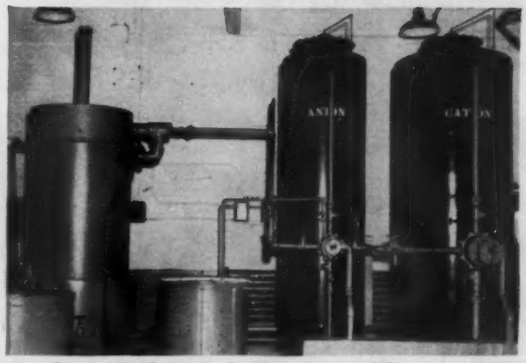
Rescue metal that has already started to rust, Rust-Oleum can be applied over metal already rusted — usually without sandblasting or the use of chemical cleaners. Simply scrape and wirebrush to remove rust-scale, blisters, dirt, etc., then apply Rust-Oleum by brush, dip, or spray. It stops the rust, and promptly dries to a firm, pliable protective coating.

RUST-OLEUM is proving itself everyday in ever greater use by railroads. It is the practical answer to many of your rust problems. Buy or specify RUST-OLEUM on all new construction and rolling stock. Use it in your maintenance, repair and rebuilding work.

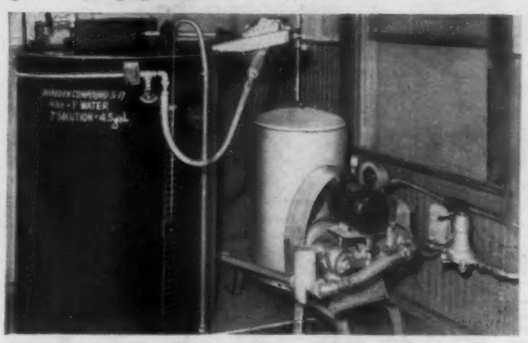
New catalog just off the press. Write for your copy today!

RUST-OLEUM CORPORATION
2582 Oakton Street, Evanston, Illinois

FOLLOW THE DEARBORN 3-STEP PROCEDURE FOR NON-CORROSIVE DIESEL COOLING WATER



Dearborn 2-Bed De-Ionization System delivering 40,000 gallons of high-purity water daily.



This compact Dearborn equipment set-up supplies 517 treatment for four railroads at a single terminal.

Dearborn Chromokit. A quick, inexpensive test for chromate content of Diesel cooling water.

1. A DEARBORN DE-IONIZING SYSTEM

To obtain mineral-free water for cooling Diesel engines, do it by de-ionization, at only a fraction of the cost of distilled water. Dearborn is today assisting railroads across the country in this important work. Your inquiry is invited. A Dearborn engineer will gladly recommend the size and type of system exactly suited to your needs. For complete information on what such a system will cost—*and save*—the following is necessary: (1) Mineral analysis (or ½-gallon sample) of raw water supply; (2) average daily gallonage and maximum hourly delivery rate required; (3) size of raw water supply line together with maximum and minimum pressures; (4) space available for installation of system. An inquiry will entail no obligation.

2. DEARBORN TREATMENT 517

Once the high quality water is obtained, it should be further treated to bring the water into proper chemical balance to eliminate the possibility of corrosion. An effective, low cost treatment for this purpose is Dearborn Formula 517 which supplies the cooling water with chromate, a principal inhibitor of ferrous metal corrosion. Once this system is installed, it is a simple matter to control the Dearborn 517 treatment to keep chromate concentrations up to strength with the newly developed Dearborn Chromokit described below.

3. THE DEARBORN CHROMOKIT

The Dearborn Chromokit makes it easy to check Diesel cooling water for proper chromate strength.

This is all you do: 1. Take sample of cooling water; 2. Place one drop on chemically treated test card; 3. Match color of spot against standard color guide for chromate strength; 4. Check against Treatment Adjustment Chart and add chromate treatment as indicated.

The Chromokit makes it easy, inexpensive and accurate. It eliminates time-consuming laboratory tests and expensive equipment. It's compact (only 5¾ x 3½ x 3¾ in. overall), convenient and simple. Detailed instructions are included. Requisition one today.

DEARBORN CHEMICAL COMPANY
General Offices: 310 South Michigan Avenue • Chicago 4, Illinois

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Gentlemen: Please send complete information on the Dearborn 3-Step Procedure for Diesel Cooling Water.

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Railroad.....

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DIVISION OF SIMMONS COMPANY, MAKERS OF THE FAMOUS BEAUTYREST MATTRESS

12

twelve

Rail Diesel Cars for the Consolidated Railroads of Cuba

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These new RDCs will be operated by the Cuba Railroad, the Cuba Northern, and the Guantanamo and Western; all subsidiaries of the Consolidated Railroads of Cuba. Passenger, mail and baggage service will be furnished.

Only a little more than a year old, the revolutionary RDC has proved well its ability to provide fast, reliable operation at the lowest cost-per-passenger of any type of modern railroad equipment.

The Budd Company, Philadelphia 32.

Budd

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S-W KROMIK® PRIMER

with FOUR protective pigments—gives longer-lasting, lower-cost protection

Red lead alone provides protection as a primer—but red lead combined with three other active protective agents provides even tougher, longer-lasting, lower cost protection!

That's why Sherwin-Williams KROMIK Primer offers greater resistance to moisture, rust and corrosion for bridges or any metal structure, as the exposure test panels above illustrate. Zinc chromate inhibits corrosion . . . zinc oxide adds strength and hardness to the film . . . red lead fortifies the water and corrosion resistance . . . iron oxide adds protection against sunlight and greater covering power. Application difficulties, excessive weight and high costs of heavy red leads are avoided.

S-W KROMIK Primer is just one of a complete line of Sherwin-Williams Finishes engineered and proved for railway service. Ask for them—specify them—through your S-W representative, or write The Sherwin-Williams Co., Transportation Division, Cleveland 1, Ohio.

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Diesel Oil

...on more than 60 U.S. railroads

Wide acceptance of STANDARD HD by railway diesel operators is one proof of the ability of this superior diesel-engine lubricant to reduce costs and maintenance. Test runs on line after line led to adoption of STANDARD HD for all types of service—heavy freight haulage, fast passenger runs, or switching. All makes and models of diesel engines are successfully lubricated with STANDARD HD.

You will get the greatest possible engine cleanliness and economy by the exclusive use of STANDARD HD on diesel equipment.

You can count on STANDARD HD to help you keep diesel-engine maintenance and operating costs low. Standard Oil Company (Indiana), 910 South Michigan Avenue, Chicago 80, Illinois.

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WESTINGHOUSE Friction Draft Gear • Certified A.A.R.

CARDWELL Friction Bolster Spring for A.A.R. and Long-Travel Springs

PROTECTION

IN ALL RESPECTS

Cardwell and Westinghouse shock-absorbing devices protect rolling stock against excessive horizontal, vertical, lateral and angular forces. They are designed with a high factor of safety, resulting in capacities well above the requirements.

Over 98% of the cars in freight carrying service are A. A. R. construction and over 96% have Friction Draft Gears.

Cardwell Westinghouse Co., Chicago
Canadian Cardwell Co., Ltd., Montreal

2711

Buffet cars on California Zephyrs serve water, milk, iced tea, juices (in scene at right) using Lily paper service.

Chicago & Northwestern Railroad has many uses for Lily paper cups and dishes, including water, juices, milk, salads, pudding, jello, ice cream.

SAVE AS YOU SERVE

Each Lily* cup or dish pictured saves a glass or a dish. Here's how: There's no handling, no washing, and no chance of breakage. No wonder they're being used successfully on 32 of the nation's dining and buffet cars! Study the photographs. See how many kinds of food and drinks you can serve in Lily paper service. There's a Lily cup or container for practically every purpose you could want on your dining car or coach feeding service. Write now for further information or demonstration.

Snack bar on Monon Route, below, serves water, juices, relishes, ice cream — among other foods and drinks — in "save-a-dish" Lily service.

LILY PAPER SERVICE FOR RAILWAY DINING

6M-6 oz. LILY CUPS — fruit and vegetable juices, club breakfasts, lunches . . . water . . . single orders of juices.

12M-12 oz. LILY CUPS — milk . . . water . . . iced tea . . . iced coffee . . . double juice orders . . . soft drinks and beer.

66 LILY DISH — ½ breakfast grapefruit . . . sliced fruit . . . salads . . . relishes . . . puddings . . . custards . . . jello . . . preserved fruit . . . fruit compote . . . ice cream . . . sundaes . . . cold cereal.

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Please send samples and full information on Lily Paper Food Service for buffet, snack bar and dining car use.

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Users' experience certifies Freedom Wheels as the most successful means of suppressing or eliminating thermal cracking under the unusually severe braking conditions in today's high speed operations.

Over 500,000 in service. Ask a user about Freedom Wheels' high-speed, severe-braking performance.

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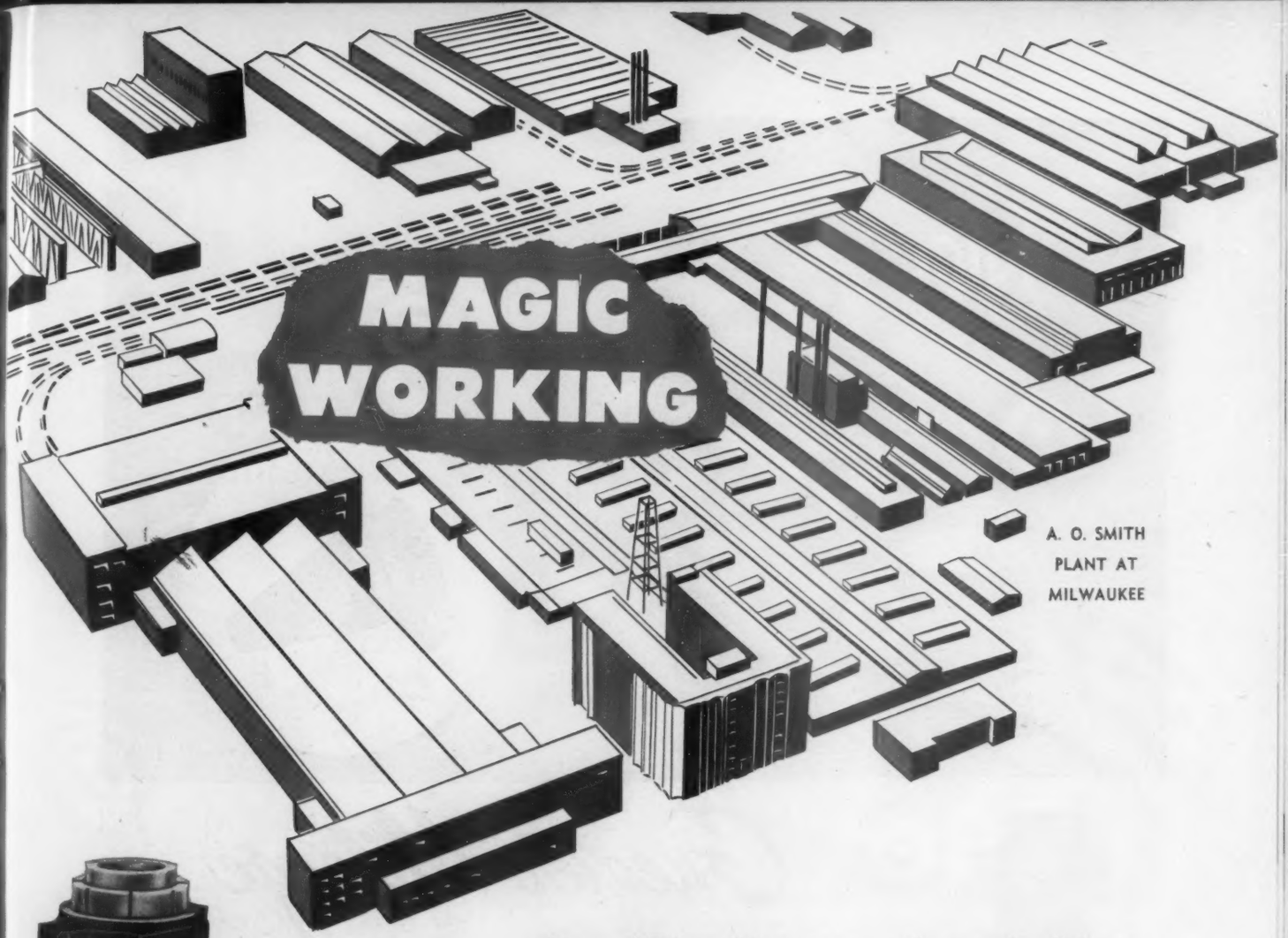

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MEN working, too . . . thousands of them, working magic with steel. The men who work here know steel as few men know it and out of their knowledge have fabricated, to our design, America's first all pressed steel draft gear—the Hulson Type 202. Saving an average of 249 pounds per car, the Hulson 202 has the capacity and structural strength required by the A.A.R. plus tare-weight saving that spells real economy for American railroads.

SPECIFY HULSON 202 ON YOUR FREIGHT CARS.

HULSON TYPE 202

DRAFT GEAR

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HS-98
NYCO Sand Trap for
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NYCO Sand Trap for
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Greater Mileage

From WHEELS - TIRES - BEARINGS with

NYCO SANDERS

You compound your savings with NYCO SANDERS. It comes about in cutting in half the time needed for refilling sandboxes and the expense of providing and maintaining sand driers, sanding towers—in short, you will run twice as far with a given amount of sand compared to conventional practice. This means that eqiupment, ballast and passengers are subject to less dust. Maximum service life is secured from traps, piping and other related parts with less wear on bearings and running gear. Replacement parts are made to be quickly and economically renewable.

NYCO's high-velocity "pin-point" distribution of the sand provides maximum traction without fouling running gear or ballast.

Efficient NYCO sanding performance is available for both Diesel and steam locomotives. It means more profitable operation of your motive power.

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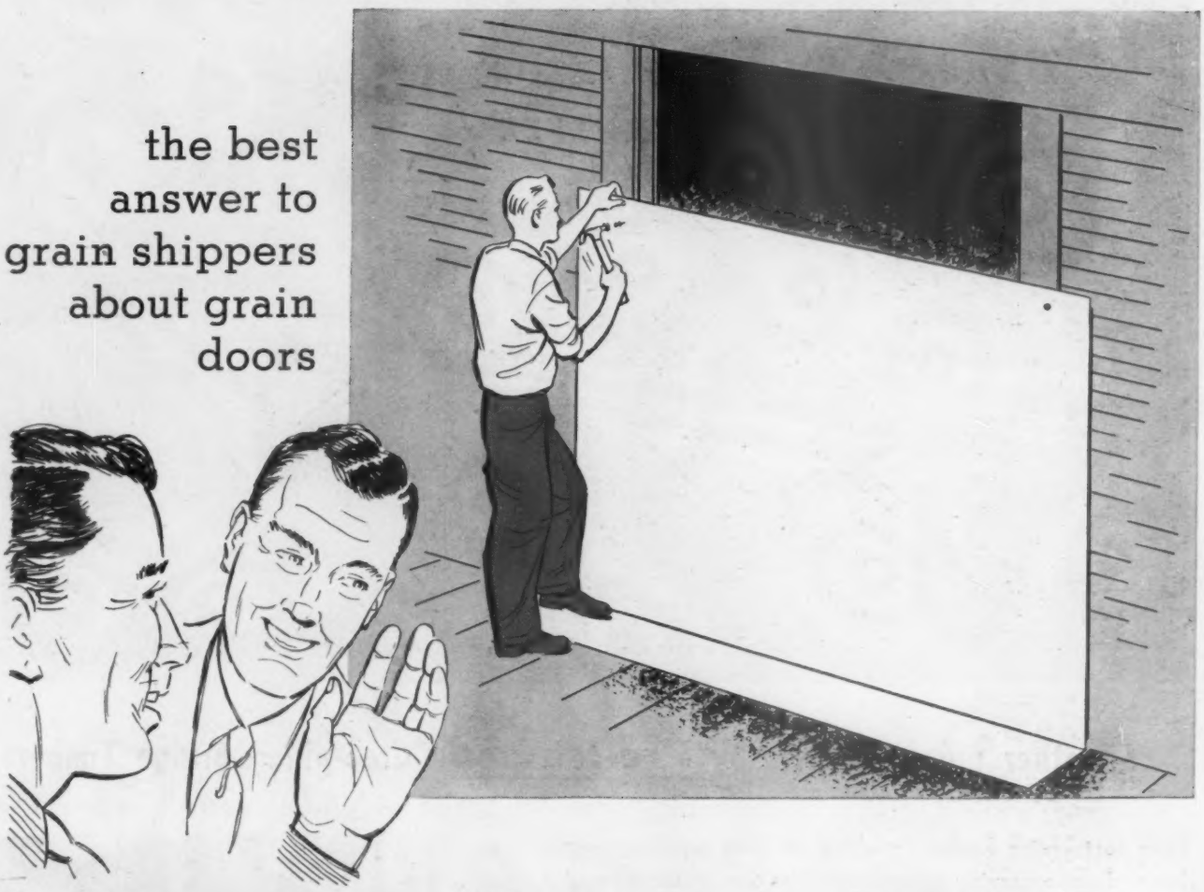
420 Lexington Ave., New York 17, N.Y. Plant: Watertown, N.Y.

FACTS...*NOT FICTION!*

the best answer to grain shippers about grain doors



Signode One-Piece Grain Doors Easily Applied by One Man!

here's why...

1. *Signode One-Piece Grain Doors* are sturdily made of strong steel strapping scientifically spaced between laminations of heavy, water-repellent, kraft liner board.

2. *Signode One-Piece Grain Doors* are constructed to permit ONE MAN to erect them. Only two of these doors are needed to cooper a car.

3. *Signode One-Piece Grain Doors* are leakproof. Weight of load seals bottom and sides. They are available in 6-foot heights, and weigh only 14 lbs.

4. *Signode One-Piece Grain Doors* eliminate need for heavy barricades . . . end splintering and breaking of barricades that often clog car doors . . . no protruding nails to injure workers.

5. *Signode One-Piece Grain Doors* are quickly and easily opened. A blow with an ax or hatchet on top strap starts grain flow. When last strap is cut, doors fold back out of the way.

6. APPROVED by Association of American Railroads—Pamphlet No. 36 — revised.

For further information write

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Railroad Sales Division
2637 N. Western Avenue, Chicago 47, Illinois

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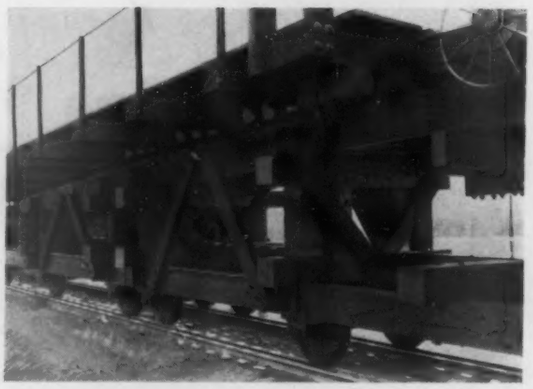
. . . another unique service by *Pre-framed* "Creo-pine" Bridge Timbers

How to transfer loaded freight cars from land to river barge despite varying water levels was the problem faced by the Nashville, Chattanooga & St. Louis Railway at Guntersville, Alabama, on the Tennessee River. For 56 years it has been solved effectively by an ingenious underwater cradle constructed of pre-framed "Creo-pine" bridge timbers. This use of pressure-creosoted timbers is only one of many which alert railroad men use to cut installation costs, in many cases up to 50 per cent.

Mill framed, "Creo-pine" timbers are dapped, bored, and sized before treatment, with accuracy not possible in hand-framing. All "Creo-pine" products are pressure creosoted for long life, and shipped ready for use. Write for information on "Creo-pine" bridge timbers. Find out how they can save money for you.



Mounted on carwheels, the cradle can be moved up or down inclined track leading into water, to accommodate fluctuating river levels. Over 200 feet in length, the cradle required 30,000 board feet of "Creo-pine" timber.

Creo-pine
TRADE MARK REG. U. S. PAT. OFF.

CREO-PINE PRODUCTS

Poles	Cribbing	Cross Ties
Cross Arms	Bridge Timbers	Switch Ties

SOUTHERN WOOD PRESERVING COMPANY, ATLANTA, GA.

Representatives in New York, Philadelphia, Toledo, Pittsburgh, Detroit, & Chattanooga

NO TWO BLACK EYES? SIR . . .

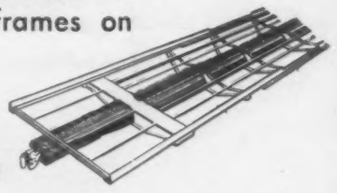
. . . not when lading is safeguarded by "Shock-force control."

When lading is damaged in transit, the shipper holds the originating carrier guilty of negligence. That's one black eye. The consignee heaps his wrath on the road making delivery. That's another black eye.

For every damage claim, two black eyes, two disgruntled customers, two new prime prospects for truck transportation.

How to avoid all this ill-will? Equip cars for the finest possible protection to lading, cushion them from shock with Duryea Cushion Underframe . . . the cushioning device that provides "shock-force control," that protects both cars and lading against the great majority of excessive classification yard coupling impacts.

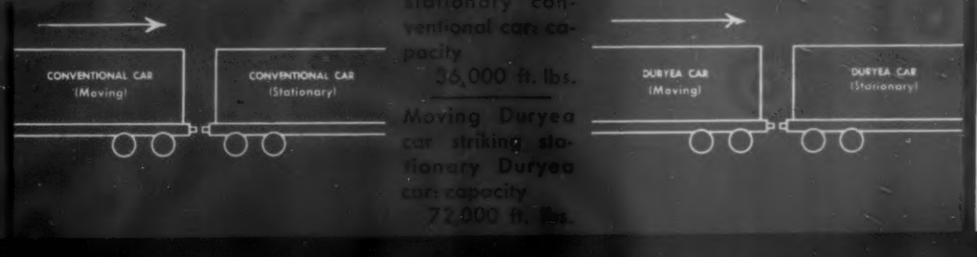
To protect lading, lengthen useful car life, to reduce present fantastic lading damage costs, specify Duryea Cushion Underframes on all new cars.



duryea cushion underframe

HULSON CO. 332 SOUTH MICHIGAN AVENUE CHICAGO 4, ILLINOIS

40% extra lading protection



For maximum Diesel Performance use Vanadium Steels and Irons

You can obtain the mechanical properties required for satisfactory operation and long service life of Diesel locomotives by using Vanadium steels and irons.

Vanadium steel forgings, as well as Vanadium iron castings, have been designed for the best balance of mechanical properties obtainable for the service required of each specific part.

Recommended steel and iron compositions are given in the accompanying list for a variety of parts, many of which have already established satisfactory service records. A choice of materials is shown in some instances, in recognition of preference and of those variations in design and type of service which govern the properties required.

The metallurgical engineers of the Vanadium Corporation of America realize that each part is an individual problem, and they are prepared to cooperate with you to the fullest extent in selecting the best material for each application.

• • •

Write for Data Sheet giving details of composition, heat treatment and mechanical properties of Vanadium steels and irons for various Diesel applications.

MAKERS OF ALLOYS

VANCORAM BRAND

CHEMICALS AND METALS

PART	MATERIAL
	STEELS
AXLES	C-V steel
BRAKE RIGGING CASTINGS	Mn-V cast steel
CAMSHAFTS	Cr-V (AISI 6120) steel
COUPLERS	Mn-V cast steel
CRANKSHAFTS	Cr-Mo-V (4140+V) steel Ni-Cr-Mo-V (4340+V) steel Cr-V (6140) steel Cr-V (50T46) steel C-V (1045+V) steel
ENGINE BLOCK BASE	Mn-V plate steel
EQUALIZERS	Mn-V steel
GEARS	Cr-V (6145) steel
INJECTOR TIPS	Cr-V (6145) steel
PISTON PINS	Cr-V (AISI 6120) steel
ROCKER ARMS	Mn-V cast steel
ROCKER ARM BRACKETS	Mn-V cast steel
ROCKER ARM SHAFTS	Cr-V (AISI 6120) steel
SPRINGS	Cr-V (AISI 6150) steel Cr-Mo-V steel
TRUCK FRAMES	C-V cast steel Mn-V cast steel Ni-V cast steel
	IRONS
CYLINDER HEADS	Mo-V cast iron, Graphidox-treated*
CYLINDER LINERS	Cr-Mo-V cast iron, Graphidox-treated* Mn-V cast iron
EXHAUST MANIFOLDS	Mo-V cast iron Cr-Mo-V cast iron, Graphidox-treated*
PISTONS	Ni-Mo-V cast iron, Graphidox-treated* Mo-V cast iron, Graphidox-treated* Ni-Cr-Mo-V cast iron, Graphidox-treated*

**Graphidox is a graphitizing and deoxidizing alloy.*

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420 LEXINGTON AVENUE, NEW YORK 17, N. Y. • DETROIT • CHICAGO • CLEVELAND • PITTSBURGH

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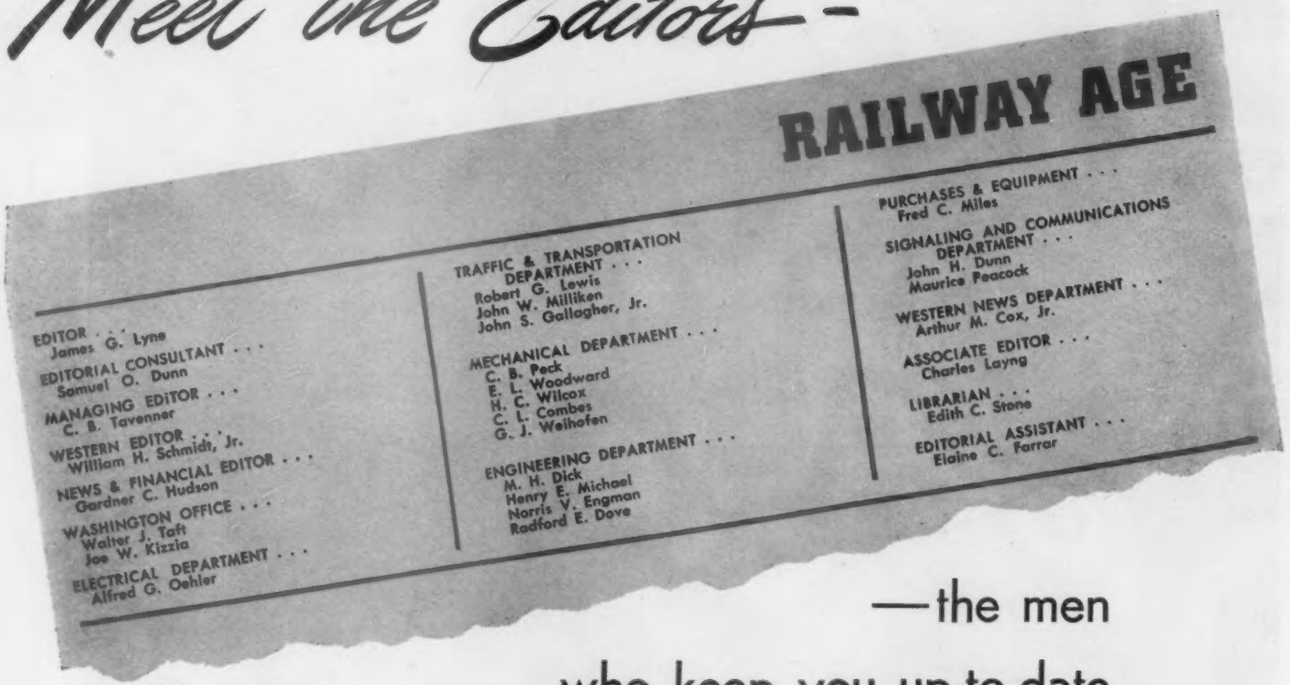

—the men who keep you up-to-date on all the latest railway developments

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RAILWAY AGE

JAMES G. LYNE: President; editor, RAILWAY AGE. A.B., University of Kansas; Ph.D., New York University. Following several years' work in the car, engineering, mechanical and operating departments of the Chicago, Rock Island & Pacific Railway, Mr. Lyne joined the editorial staff in 1920. After serving in several capacities including that of financial editor, he was elected executive vice president and co-editor of RAILWAY AGE in 1948, and attained his present position in 1950. Author of "The Need of the Railways for Additional Fixed Plant Capital and Possible Means of its Attainment."

SAMUEL O. DUNN: Chairman Emeritus; editorial consultant, RAILWAY AGE. Starting as a printer's devil at the age of 12, Mr. Dunn's long professional career has been marked by many outstanding achievements, principally as an editor, author, economist, and lecturer. Characteristic of his indomitable efforts have been the many editorial campaigns that he instigated for better railroading during more than 46 years of association with that industry.

C. B. TAVENNER: Managing editor RAILWAY AGE. B.S. University of Virginia. Twenty-one years' experience in research, editorial and sales work, free lance editorial and literary writing before joining editorial staff in 1942. Author of "Brief Facts", and "Seeing California."

WILLIAM H. SCHMIDT: Western editor, RAILWAY AGE. A.B. Rutgers University. Served briefly with the Chicago, Milwaukee, St. Paul & Pacific R.R. and as instructor, Rutgers University. Joined editorial staff in 1937. Rose to rank of major in the Army of United States, Quartermasters and Transportation Corps, during World War II.

GARDNER C. HUDSON: News and financial editor. A.B. Brown University. M.B.A. Harvard University. Reportorial experience with Massachusetts newspaper; railroad experience with Bangor & Aroostook; formerly executive secretary, Kentucky R.R. Assn.; major in Air Corps during World War II. An associate editor on RAILWAY AGE'S staff for 6 years.

WALTER J. TAFT: Head of Washington Bureau. Graduate, Providence College and Harvard School of Business Administration. Began career as newspaper reporter and worked for Boston & Maine and Bangor & Aroostook. Member of Simmons-Boardman editorial staff for 23 years, 13 of which have been in the nation's Capital.

JOE W. KIZZIA: Associate editor in Washington. B.S. in Journalism, Northwestern University. With War Production Board in 1942. Member of Railway Operating Battalion and Railway Grand Division, 1943-45. Reporter and editor on Arkansan newspaper. Joined RAILWAY AGE editorial staff in 1949.

ALFRED G. OEHLER: Electrical editor RAILWAY AGE and RAILWAY MECHANICAL AND ELECTRICAL ENGINEER for 32 years. B.S. in E.E., University of Wisconsin. Previous experience with the General Electric Co., Northern Pacific Ry., and Wisconsin, Minnesota Light and Power Co. Past-president, American Welding Society, Fellow of American Institute of Electrical Engineers, associate member, Electrical Section, Engineering Division, Association of American Railroads; member of Board of Trustees of United Engineering Trustees.

ROBERT G. LEWIS: Assistant to the president; associate traffic and transportation editor. Served with the Bessemer & Lake Erie and the operating and freight traffic departments of the Pennsylvania Railroad before entering RAILWAY AGE service in 1947.

JOHN W. MILLIKEN: Associate traffic and transportation editor. B.A., Dartmouth College. M.A., Bucknell University. Served with the Pennsylvania Railroad in several capacities in the freight and passenger departments. Six years in the Army, being released as a Captain of engineers in 1946, and then joined the editorial staff.

JOHN S. GALLAGHER, JR.: Associate traffic and transportation editor. B.A. in sales management, Antioch College. 12 years railroad experience in traffic work, including selling, sales and service planning, statistical and research. Served with the Atlantic Coast Line, Florida East Coast, New York Central, and 10 years with the New Haven. Joined editorial staff in 1950.

C. B. PECK: Mechanical editor, RAILWAY AGE. Editor, RAILWAY MECHANICAL AND ELECTRICAL ENGINEER, A.B. in M.E., Michigan Agricultural College. After eight years' service in the mechanical departments of the Duluth, South Shore and Atlantic Railway and the Santa Fe, he joined the editorial staff in 1914. Member of the American Society of Mechanical Engineers, vice-president and member of the executive committee from 1941 to 1943.

E. L. WOODWARD: Western mechanical editor RAILWAY AGE and RAILWAY MECHANICAL AND ELECTRICAL ENGINEER. B.S. in M.E., Massachusetts Institute of Technology. After seven years of railway service in the mechanical department of the New York Central System and the Boston & Maine Railway, Mr. Woodward joined the editorial staff in 1917. Member of the executive committee of the Car Department Officers' Association, secretary of the American Society of Mechanical Engineers (R.R. Division), Chairman Pub. Rel. Comm. Western Ry. Club.

H. C. WILCOX: Associate editor, RAILWAY AGE. Managing editor, RAILWAY MECHANICAL AND ELECTRICAL ENGINEER. Educated at John B. Stetson University. Served for 10 years in the mechanical department on the Lackawanna Railroad before joining editorial staff in 1924. Member, American Society of Mechanical Engineers; general committee Railroad Division, 1939 to 1941.

C. L. COMBES: Associate mechanical editor, RAILWAY AGE and RAILWAY MECHANICAL AND ELECTRICAL ENGINEER. M.E. Cornell University. Ten years' service on Delaware & Hudson (test engineer, 1937, production engineer, 1938). Member of the American Society of Mechanical Engineers. Secretary, Railroad Division 1940-41.

G. J. WEIHOFEN: Associate mechanical editor, RAILWAY AGE and RAILWAY MECHANICAL AND ELECTRICAL ENGINEER. B.S. in M.E., Purdue University. After three years' service with the Erie Railroad and three years in the U. S. Navy, he joined editorial staff in 1946. Member Locomotive Maintenance Officers Association and Air Brake Association.

MERWIN H. DICK: Engineering editor, RAILWAY AGE. Editor, RAILWAY ENGINEERING AND MAINTENANCE. B.S. in C.E., University of Kansas. Employed in the engineering department of the Santa Fe System before joining editorial staff in 1929. Member of the American Railway Engineering Association; Roadmasters and Maintenance of Way Association; American Railway Bridge and Building Association; Maintenance of Way Club of Chicago; Western Society of Engineers.

HENRY E. MICHAEL: Associate editor, RAILWAY AGE and RAILWAY ENGINEERING AND MAINTENANCE. B.S. in C.E., Lehigh University. More than 20 years railroad experience with the Pennsylvania Railroad and Lehigh Valley, before joining editorial staff in 1946. Member, American Railway Engineering Association, Roadmasters and Maintenance of Way Association, American Railway Bridge & Building Association and Maintenance of Way Club of Chicago.

NORRIS V. ENGMAN: Associate editor, RAILWAY AGE and RAILWAY ENGINEERING AND MAINTENANCE. B.S. in C.E., Rose Polytechnic Institute. After 14 years service with the engineering department of the Milwaukee Road, five of which were served as assistant engineer in the Chief's office, he joined the editorial staff in 1948.

RADFORD E. DOVE: Associate editor, RAILWAY AGE and RAILWAY ENGINEERING AND MAINTENANCE. Educated at Northwestern University and Armour Institute. 23 years railroad experience in the maintenance and engineering departments of the Milwaukee Road. Joined editorial staff in 1944. Past president of American Railway Bridge and Building Association.

FREDERICK C. MILES: Associate editor. A.B., M.A. Columbia University. After ten years in publishing, research and newspaper reporting, he joined the staff in 1946. Member, Financial Writers Association; Academy of Political Sciences.

JOHN H. DUNN: Signaling and communications editor. RAILWAY AGE. Editor, RAILWAY SIGNALING AND COMMUNICATIONS. B.E. University of Arkansas. Associated for six years with Union Switch & Signal Co., General Railway Signal Company and Chicago, Milwaukee, St. Paul & Pacific R.R. before joining editorial staff in 1921. Member of Signal Section and Communications Section, Association of American Railroads; Chicago Engineers Club.

MAURICE PEACOCK: Associate editor, RAILWAY AGE and RAILWAY SIGNALING AND COMMUNICATIONS. Armour College of Engineering and Illinois Institute of Technology. Served with Pennsylvania Railroad and Norfolk and Western Railway, 1939-40 before joining editorial staff in 1942. During the World War II, served in the Railway Operating Battalion in the African and Italian theaters. Member of the Signal Section and Communications Section, Association of American Railroads.

ARTHUR M. COX, JR.: Western News Editor. A. B. Kenyon College. Co-founded bus line in Ohio. After 7 years experience in the operating departments of the Chicago, North Shore & Milwaukee, and the Pennsylvania Railroads, and in the traffic department of the Chicago Union Station, he joined the editorial staff in 1950.

CHARLES LAYNG: Associate editor of RAILWAY AGE. Westminster School, London, England, and University of Cincinnati. Served with the operating departments of the Southern Railway; the Midland Valley Railroad. Assistant managing editor of RAILWAY REVIEW, 1924-1927. Western editor of RAILWAY AGE in 1944, relinquished this position in 1946 because of ill health.

EDITH C. STONE: Librarian. Experience gained during five years in the editorial department led to her appointment as librarian in 1930. Member, Special Libraries Association.

ELAINE FARRAR: Editorial assistant RAILWAY AGE. Educated at University of Washington (Seattle, Washington). Joined RAILWAY AGE after several years in editorial and publication work.

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Trim, smart, easy to mount anywhere. Clear plastic window signals need for refill. Holds flat-bottom Dixies or cone-shaped Vortex Cups . . . . either large or small sizes.

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Special imprinting of cups with your insignia, slogan, name or other message to your order.

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NOW AVAILABLE ON **BROWNHOIST** LOCOMOTIVE CRANES . . .

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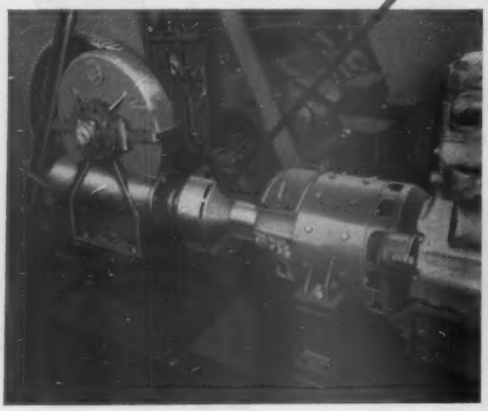

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The new, electrically operated DYNAMATIC CLUTCH, available only on Brownhoist locomotive cranes, provides a smooth, responsive flow of power never before possible with the usual disc or mechanical clutch for transmitting power to the machinery of a crane. The DYNAMATIC CLUTCH is essentially a driven rotor revolving on anti-friction bearings within a rotating coil energized by a small flow of current from the starting battery. The new DYNAMATIC CLUTCH has a 32-step control. Power response is steady and sensitive. Loads may be raised, lowered, or rotated smoothly and accurately without the use of mechanical brakes. Torsional impulse and vibration from the power source is completely eliminated. The DYNAMATIC CLUTCH provides a cushion between the engine and crane machinery. When clutch is fully engaged there is no appreciable slippage. Since there is no contact between the revolving field and armature, there is no friction between moving parts nor drag between the parts when the controller is in the off position — no parts need replacement other than inexpensive brushes. The new DYNAMATIC CLUTCH is one more good reason it pays to buy a BROWNHOIST.

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BROWNHOIST

INDUSTRIAL BROWNHOIST CORPORATION • BAY CITY, MICHIGAN • DISTRICT OFFICES: New York, Philadelphia, Pittsburgh, Cleveland, San Francisco, Chicago, Canadian Brownhoist Ltd., Montreal, Quebec. AGENCIES: Detroit, Birmingham, Houston, Los Angeles, Portland, Seattle, Spokane.

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requires *no inside grain door* and has an access door for loading, inspection and sampling.

International Steel also produces the UTILITY door without the bulk-lading features, but BOTH DOORS INCORPORATE THE INGENIOUS INTERLOCKING AND DIMENSIONING FEATURES TO ***ASSURE POSITIVE RETAINMENT ON THE CAR STRUCTURE!***

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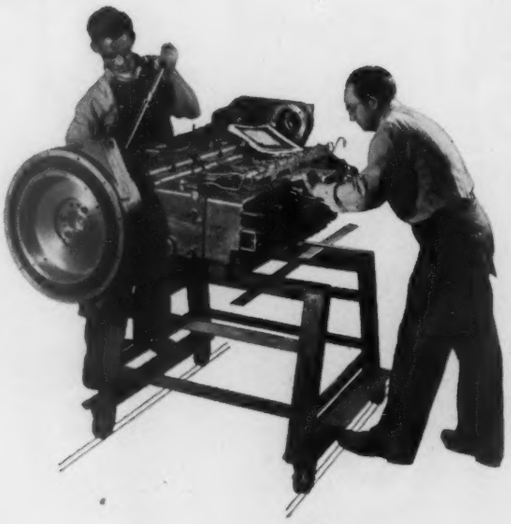
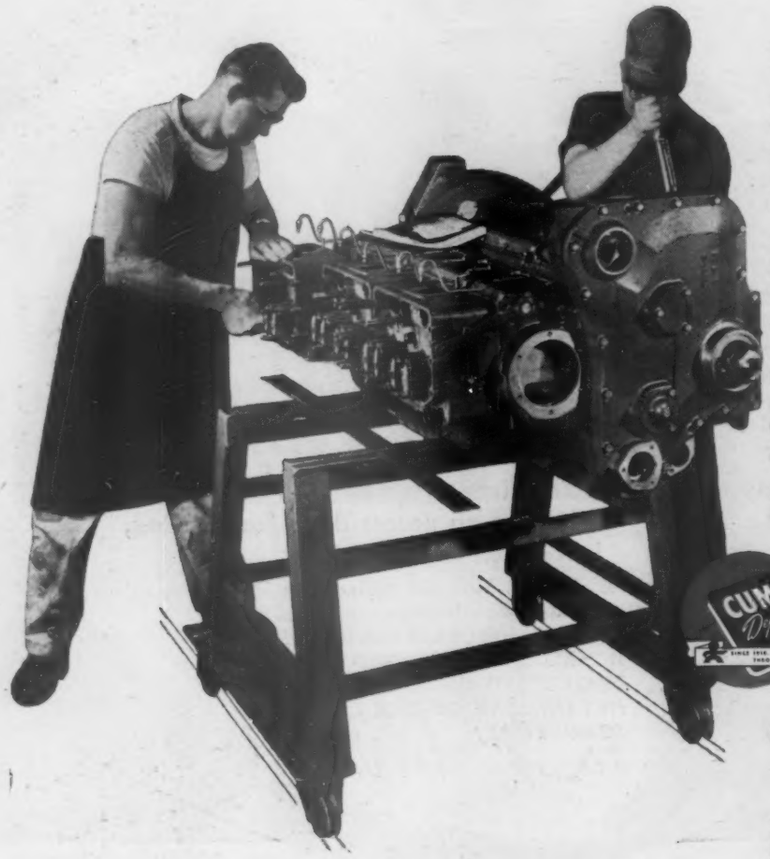
Cummins® Custom-built Diesels

Built not once but Twice



Extra care in building means extra profits for power users



Typical of the extra care that goes into the building of *every* rugged, dependable Diesel is the tear-down of the engine after assembly. First the engine is run in on the test block. Then it is completely torn down and carefully re-inspected. After that it is re-assembled and tested *again*.

Such *extra* care in precision craftsmanship is one of the reasons why Cummins engines have such an outstanding record in a wide range of applications. Cummins exclusive fuel system ... world-wide service and parts supply organization ... are other features that enable power users to make more profit with Cummins Diesels.

There's a model engineered to fit your power needs. Contact your Cummins dealer. He has more facts to show you.

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Diesel power by CUMMINS

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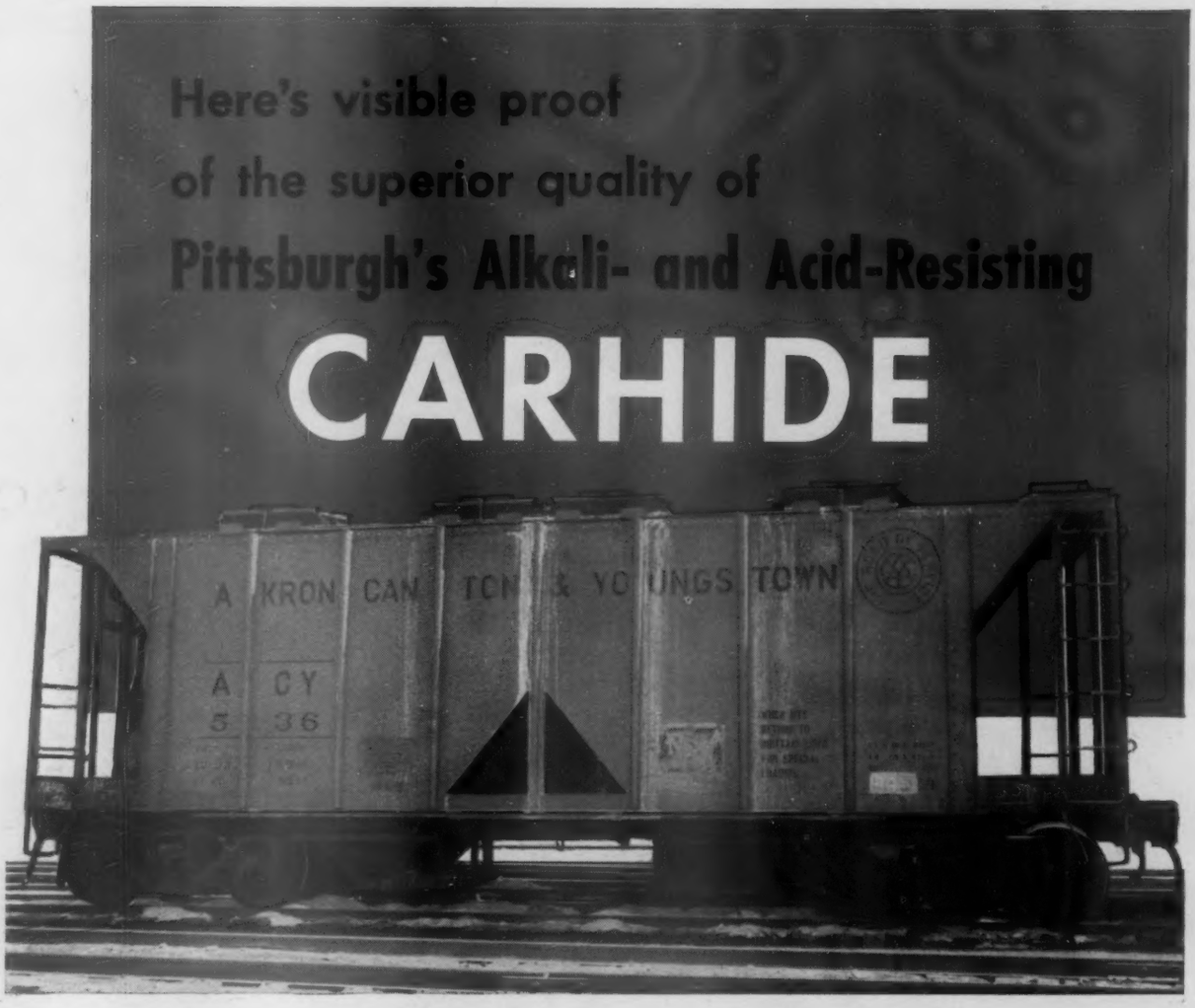
Lightweight High-speed Diesel Engines (50-550 hp) for: On-highway trucks • off-highway trucks • buses • tractors • earth-movers • shovels • cranes • industrial locomotives • air compressors logging yarders and loaders • drilling rigs • centrifugal pumps generator sets and power units • work boats and pleasure craft.



A. C. & Y. uses covered hopper cars like this in daily service for more than two years to haul corrosive soda ash—*without need of refinishing!*

AMERICAN railroad men have long recognized the superior performance of Pittsburgh CARHIDE as a freight car finish.

● **Now,** Pittsburgh announces its new alkali- and acid-resisting CARHIDE to provide exceptional protection for covered hopper cars used to haul alkalis which speedily destroy ordinary finishes.

● **Hundreds of cars** painted with this new CARHIDE have been in service on railroads in many parts of this country for periods ranging from one to more than two years with unusually satisfactory results.

● **The severest** as well as the longest test to which this protective finish has been subjected is that of a car operated by the A. C. & Y. railroad. This car has hauled soda ash continuously for more than 26 months. Although soda ash is the most corrosive of all dry cargoes, this car shows little effect of its rigorous use.

● **Besides unusual** resistance to corrosive loadings, this new CARHIDE has high resistance to abrasion. It can be scrubbed repeatedly without affecting its protective quality. CARHIDE goes on quickly and easily and dries rapidly so that one-day finishing schedules are readily maintained.

● **If your line** has cars required for such ladings as soda ash, sulphur, phosphate, cement, lime, common salt, alkalis, acids, crude oils and alcohols, it will pay you to investigate what this new alkali- and acid-resisting CARHIDE can do for you. Call on us for suggestions and advisory service. Our extensive experience in providing railway finishes for every need can save you time and money.

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ANY

Why the sea is salty

IN Norse mythology, a poor man got a magic mill from the elves. With it he could grind whatever he wanted--food, clothing, furniture, and best of all, gold. Of course, the poor peasant's lot changed from poverty to riches.

An envious brother borrowed the mill. He commanded it to "grind herrings and broth and grind them good and fast." But having taken the mill in such haste, he didn't know the magic words to shut it off. He was almost drowned in broth when the brother came to the rescue.

Finally, the magic mill was stolen by a salt dealer, who put it on his ship. Safely at sea, the skipper demanded, "Grind salt and grind it good and fast." Alas, he hadn't learned the control words either. The mill ground salt endlessly, filling all his kegs and his hold, covering the decks and at last sinking the ship. There at the bottom of the sea, so people say, the magic mill still grinds--and that's why the sea is salty.

From time immemorial, men have dreamed about magic mills and schemes to bring abundance and riches. Here in America, today, there are plans that are flooding us with superabundance of certain commodities. But what about the magic words to shut off the mill?

Isn't it time we see the truth in this ancient Norse myth, that "too much" is just as foolish as "too little?" We may well remember this first law of economics: In a *free* market, supply can adjust itself to demand--whether it be potatoes or steel--without sinking the ship. Here is a must job for all thinking Americans.

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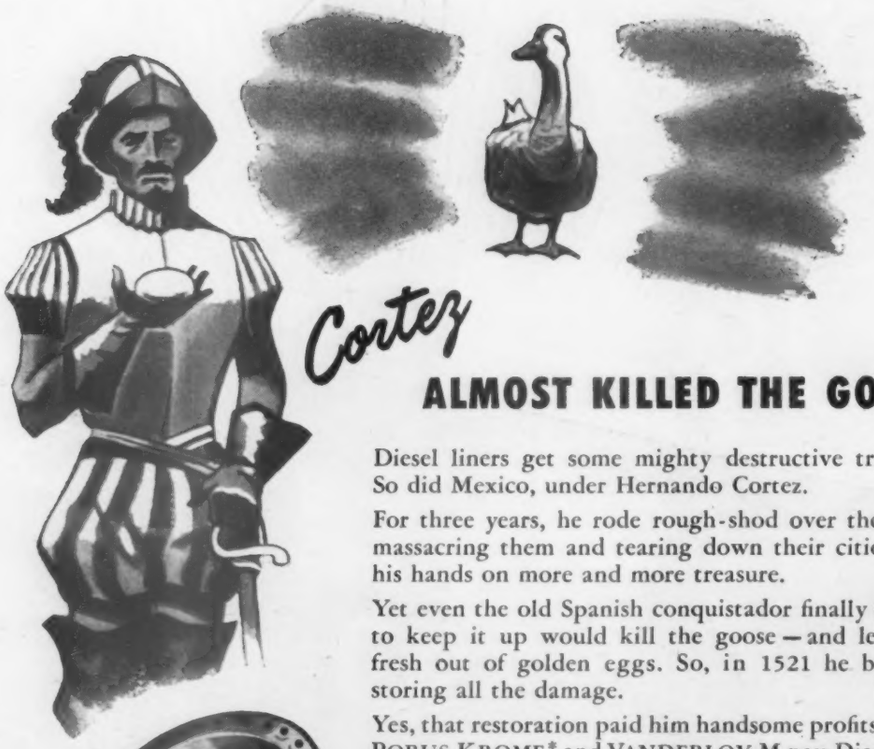

ALMOST KILLED THE GOOSE!

Diesel liners get some mighty destructive treatment. So did Mexico, under Hernando Cortez.

For three years, he rode rough-shod over the Aztecs, massacring them and tearing down their cities to get his hands on more and more treasure.

Yet even the old Spanish conquistador finally saw that to keep it up would kill the goose — and leave him fresh out of golden eggs. So, in 1521 he began restoring all the damage.

Yes, that restoration paid him handsome profits—just as PORUS-KROME* and VANDERLOY M pay Diesel users. They are particularly glad now — with replacement parts in critical supply—to have long-wearing PORUS-KROME liners, that can be renewed almost indefinitely.

As for engine parts already made useless by the practice of remachining their bearing diameters — well, even junk liners — and *crankshafts* too — are restored to original dimensions with VANDERLOY M. It gives them a longer service life than new ones. And each restoration costs as little as the first.

**PORUS-KROME is dense, hard, wear and corrosion-resistant chromium applied by the exclusive Van der Horst process which gives working surfaces an infinite number of tiny oil-resisting reservoirs for perfected lubrication.*

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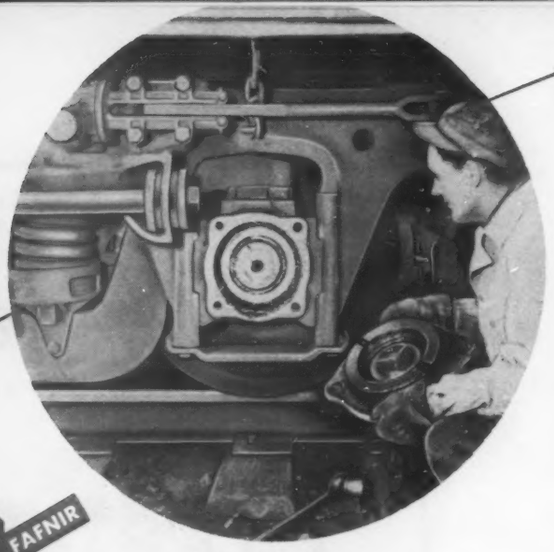
Good for the Life of your Engine



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YOUR Roller Bearing Car Journals Should Be GREASE LUBRICATED

...here's ALL FOUR famous makes of bearings—LUBRIKO LUBRICATED!

This group of pictures marks a milestone in progress. All four famous makes of bearings are shown with Lubriko Grease lubrication. The pictures were made from trains in actual daily use...not on tests. LUBRIKO M-1 SPECIAL GREASE FOR RAILROADS is past the test stage for car journals—it is now proved and approved for grease lubricated roller bearing car journals of all makes.

The change over from oil to grease can, in most instances, be made without mechanical changes in equipment. The change in terms of dollars saved and efficiency gained means many thousands of dollars to the well-known railroads who are now taking this step.*

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Increase railroad savings and profits by using Koppers *Pressure-Treated Wood* in the hundreds of applications where *untreated* wood is now used. Billions of board feet of lumber now being used for car decking, crossings, trestles, bridges, pole lines, foundation and marine piling, buildings, platforms and other purposes will need replacement *too soon* because they have not been protected by the proper pressure treatment. The useful life of installations like these can be doubled, tripled or quadrupled with Koppers Pressure-Treated Wood.

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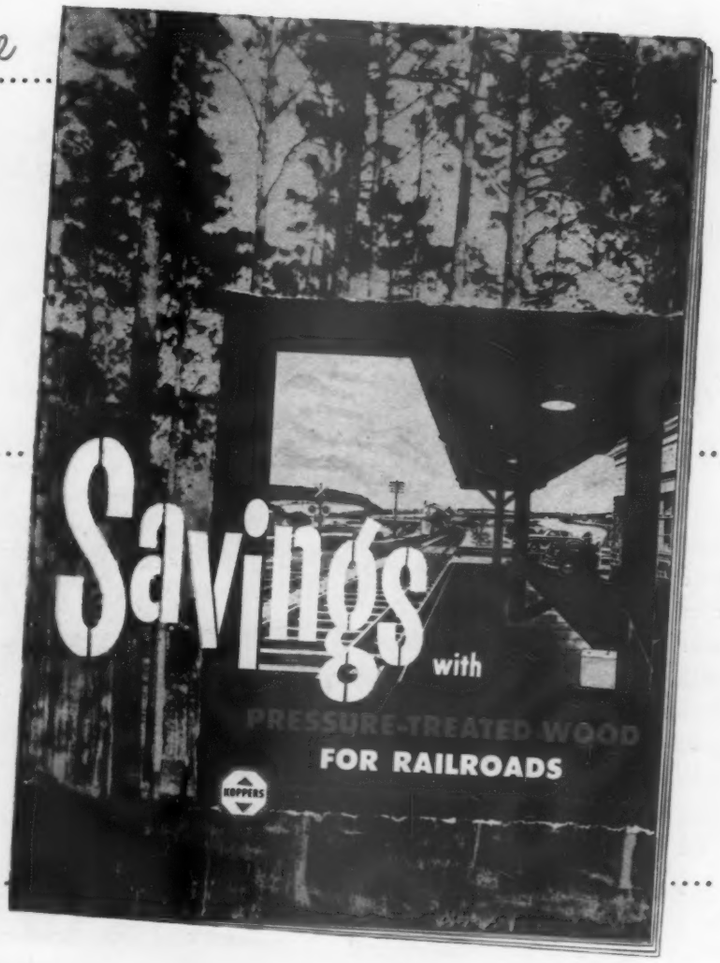

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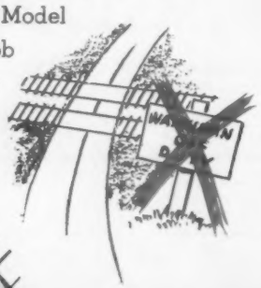

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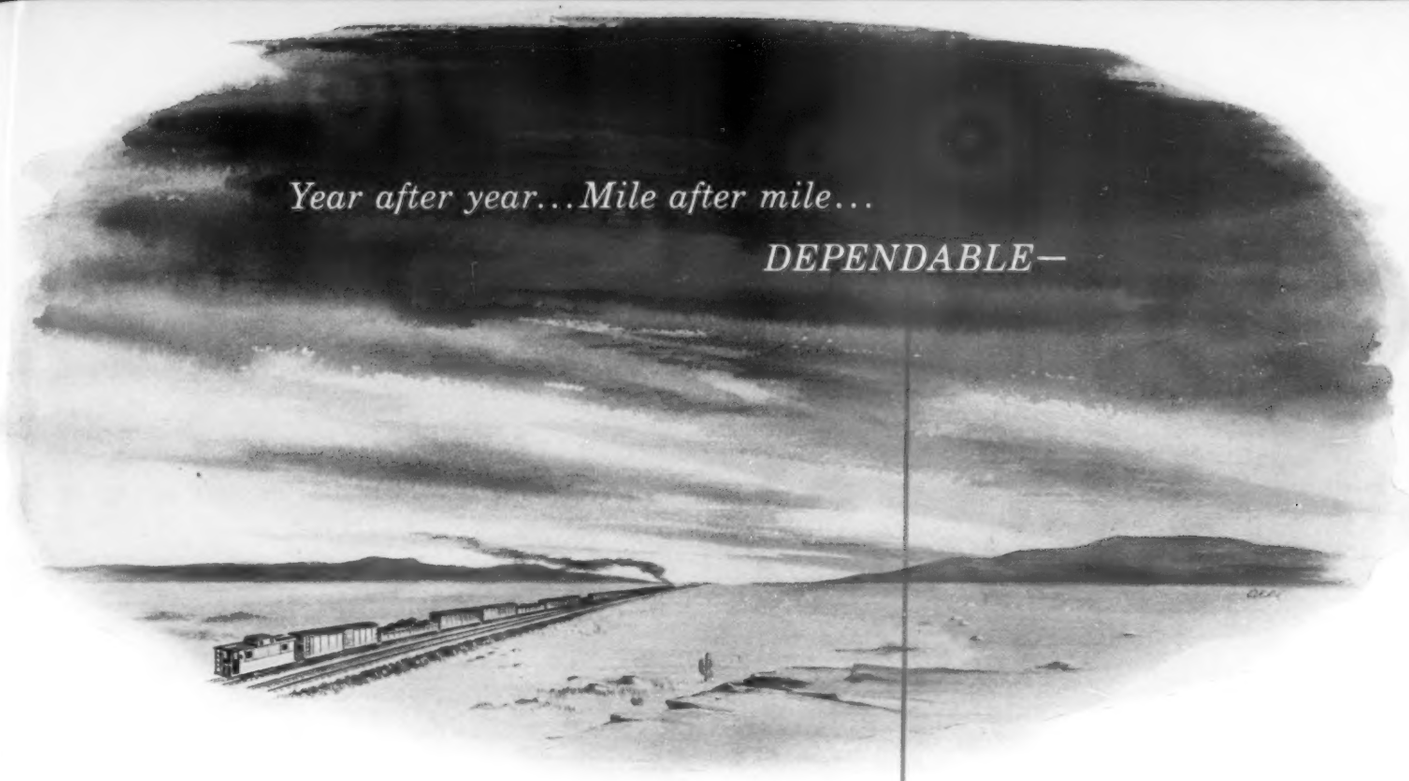

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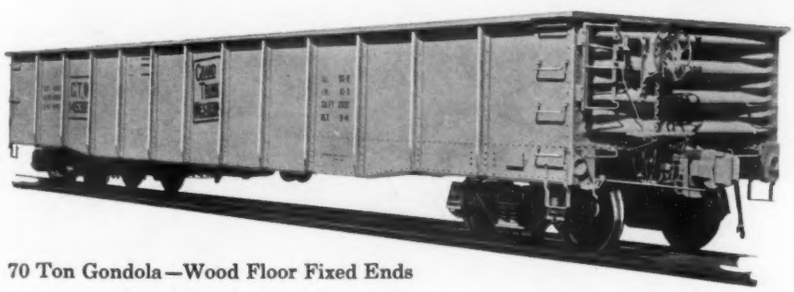

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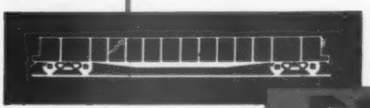

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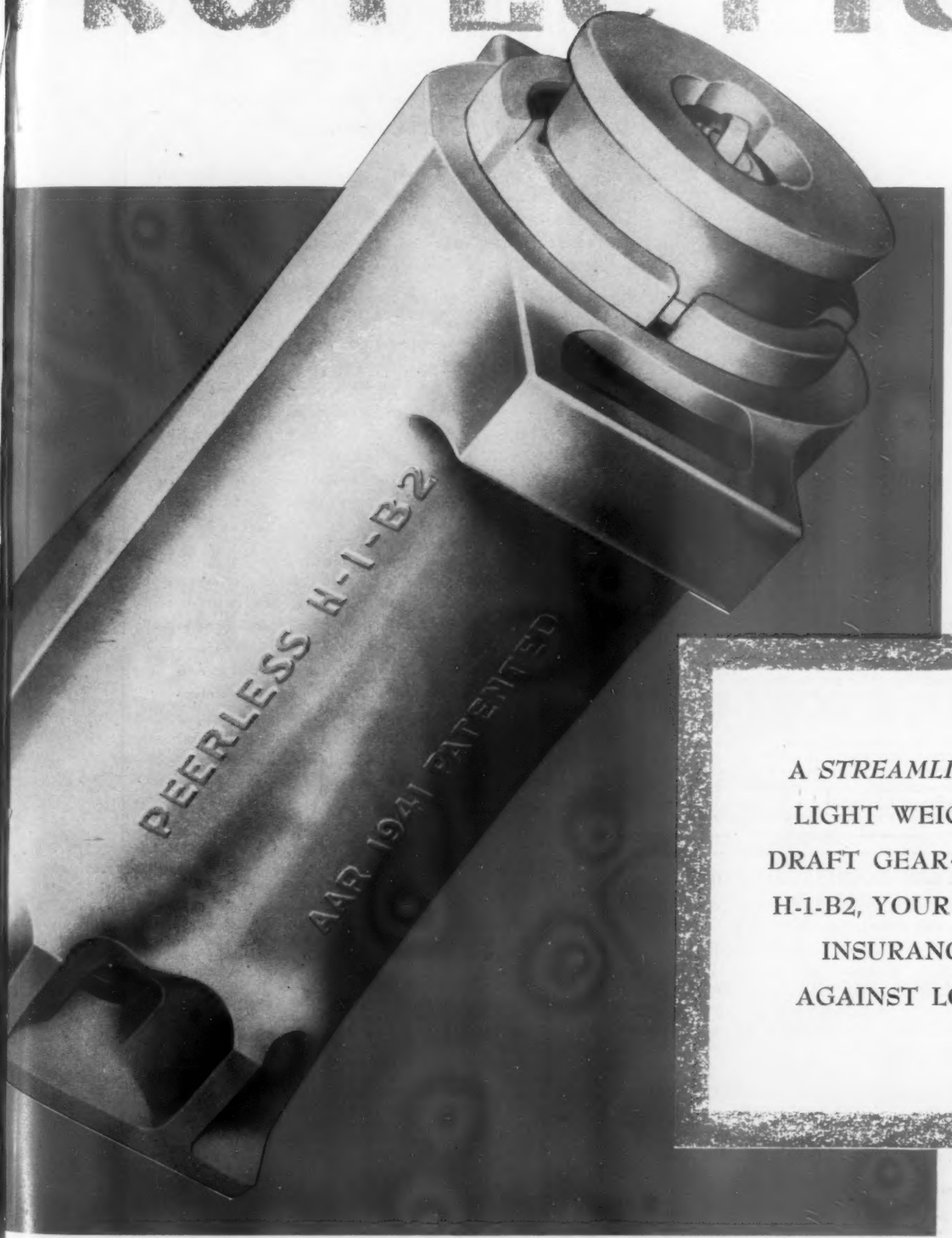

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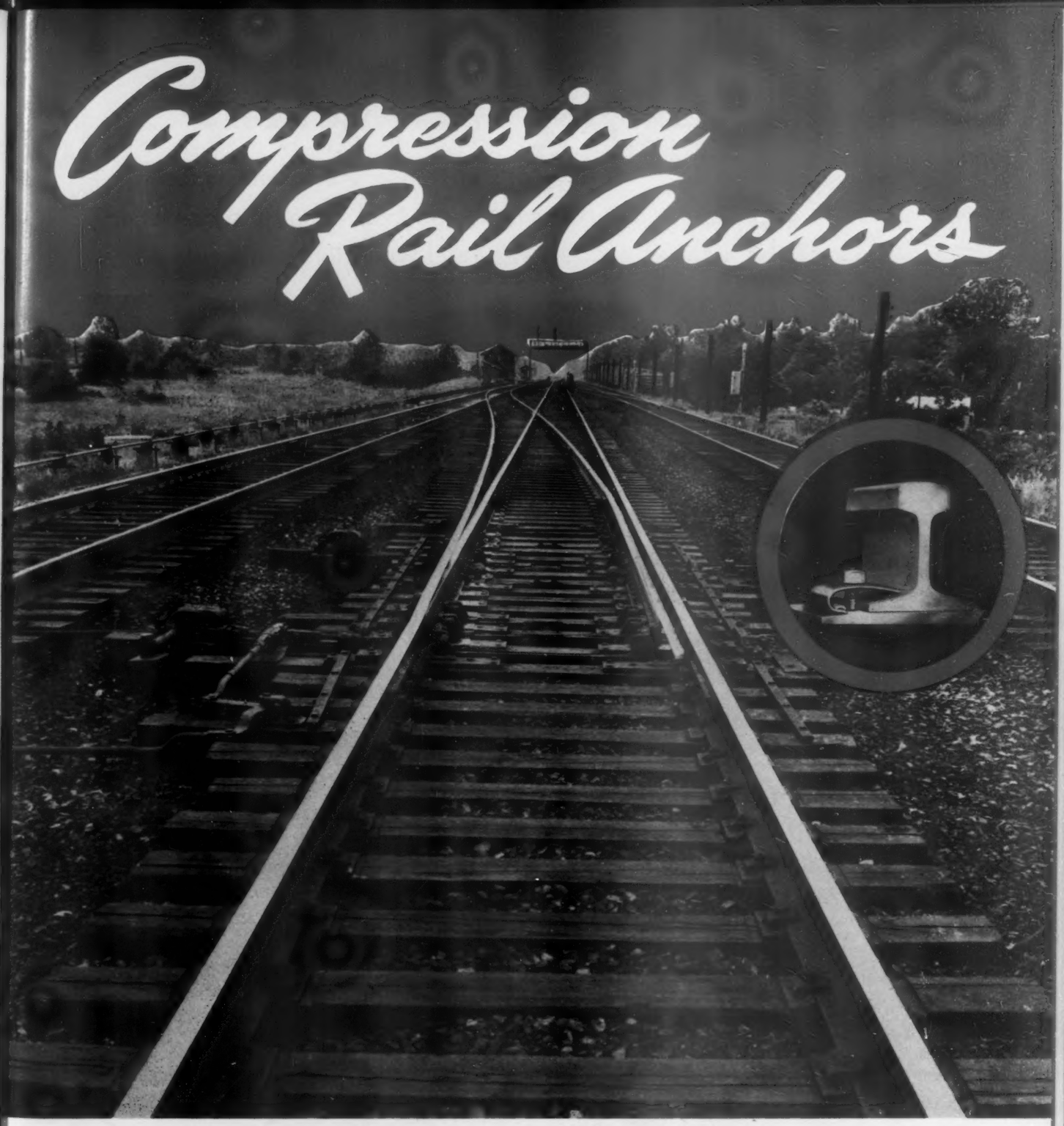

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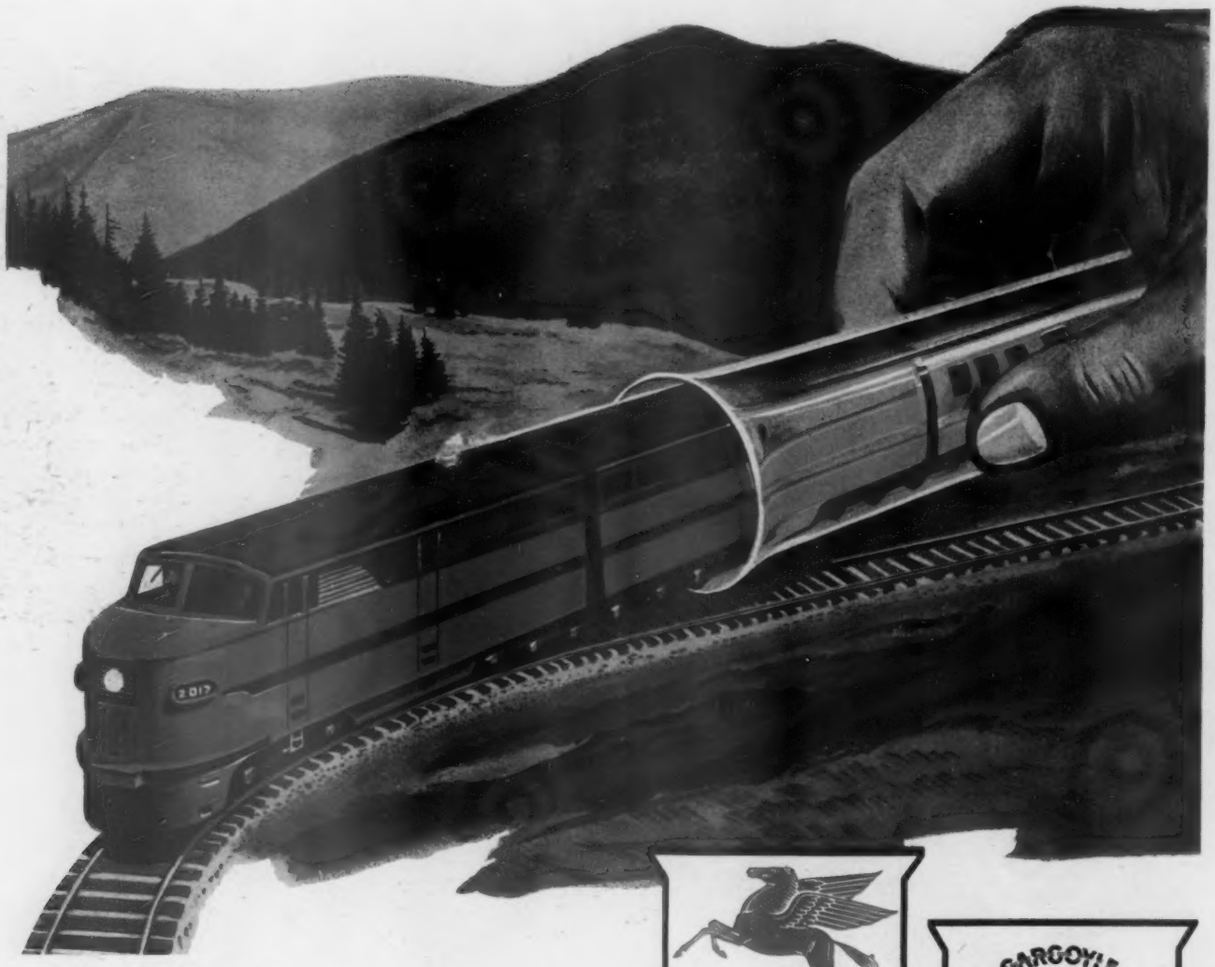

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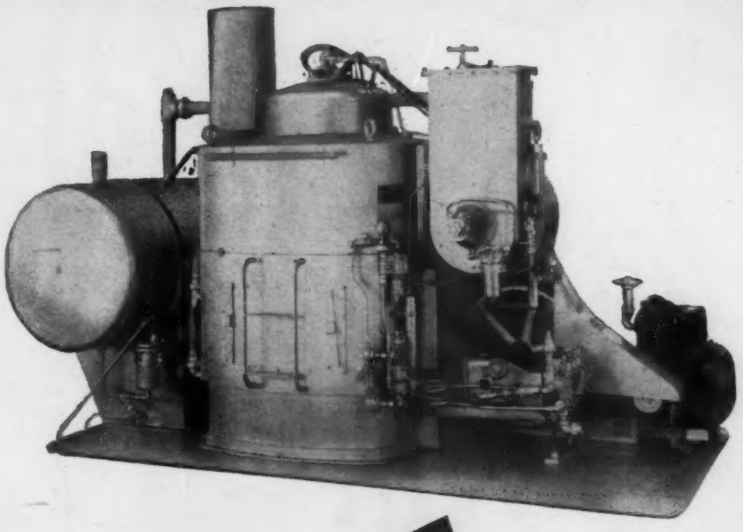

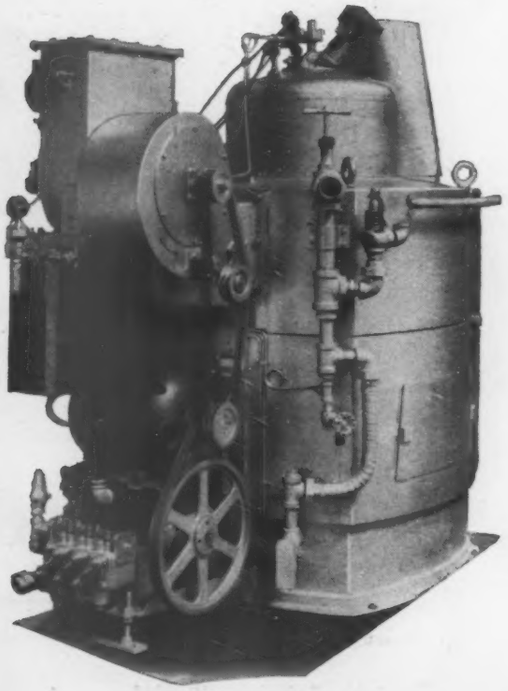

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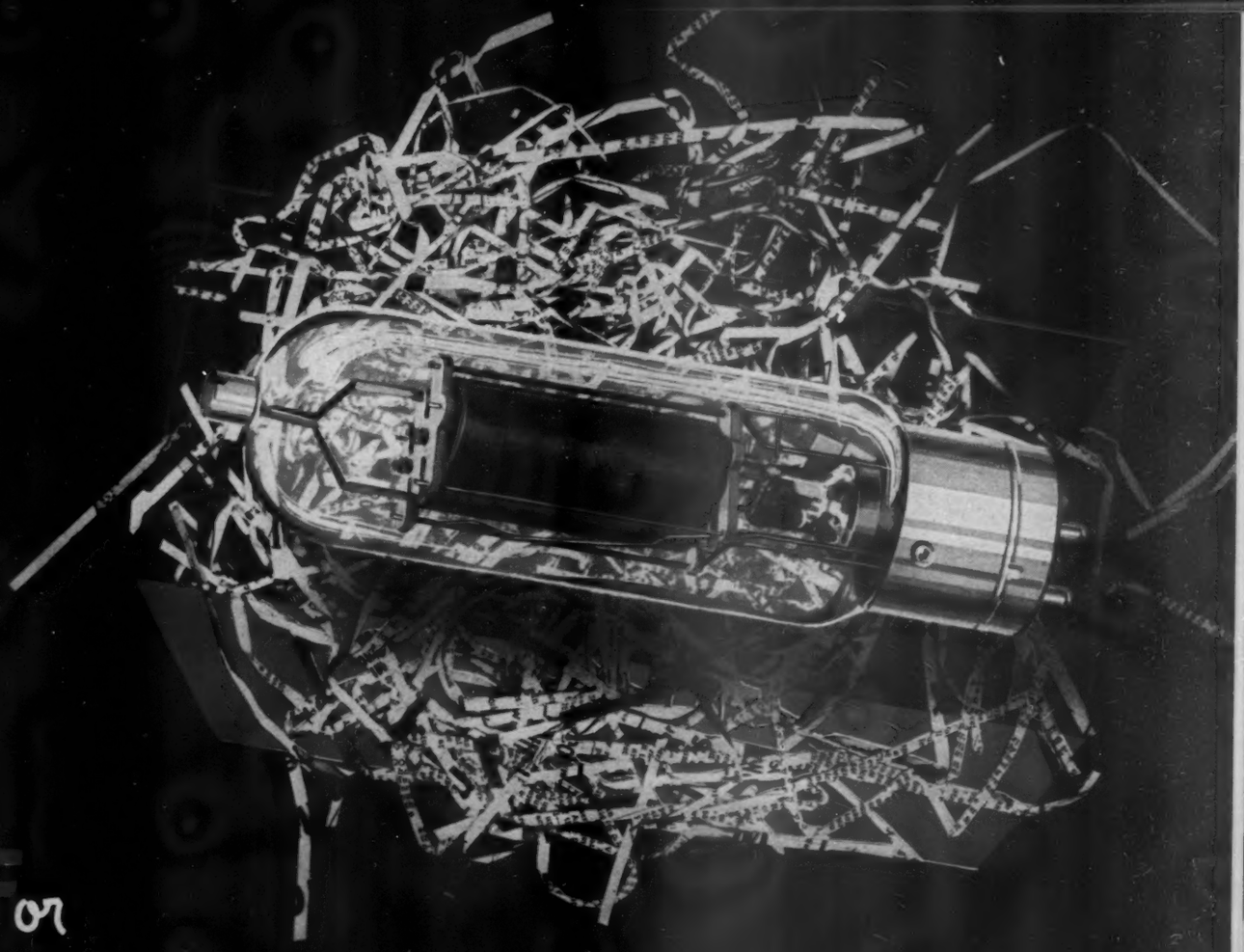

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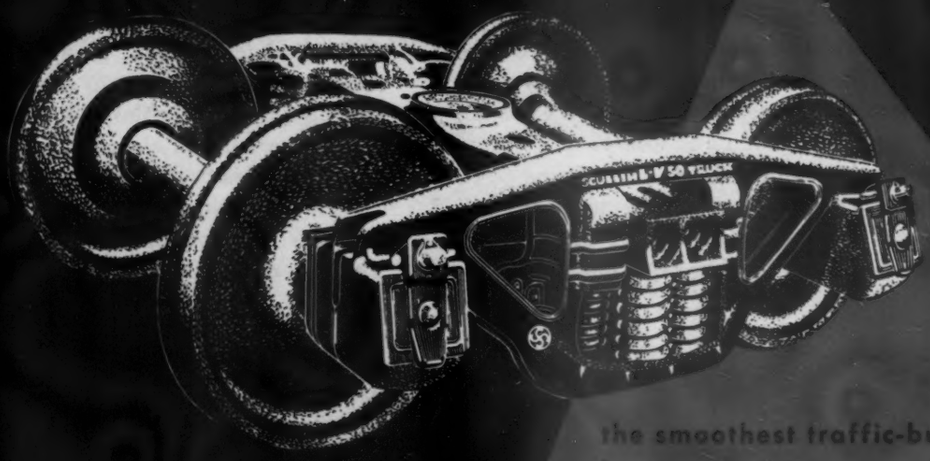

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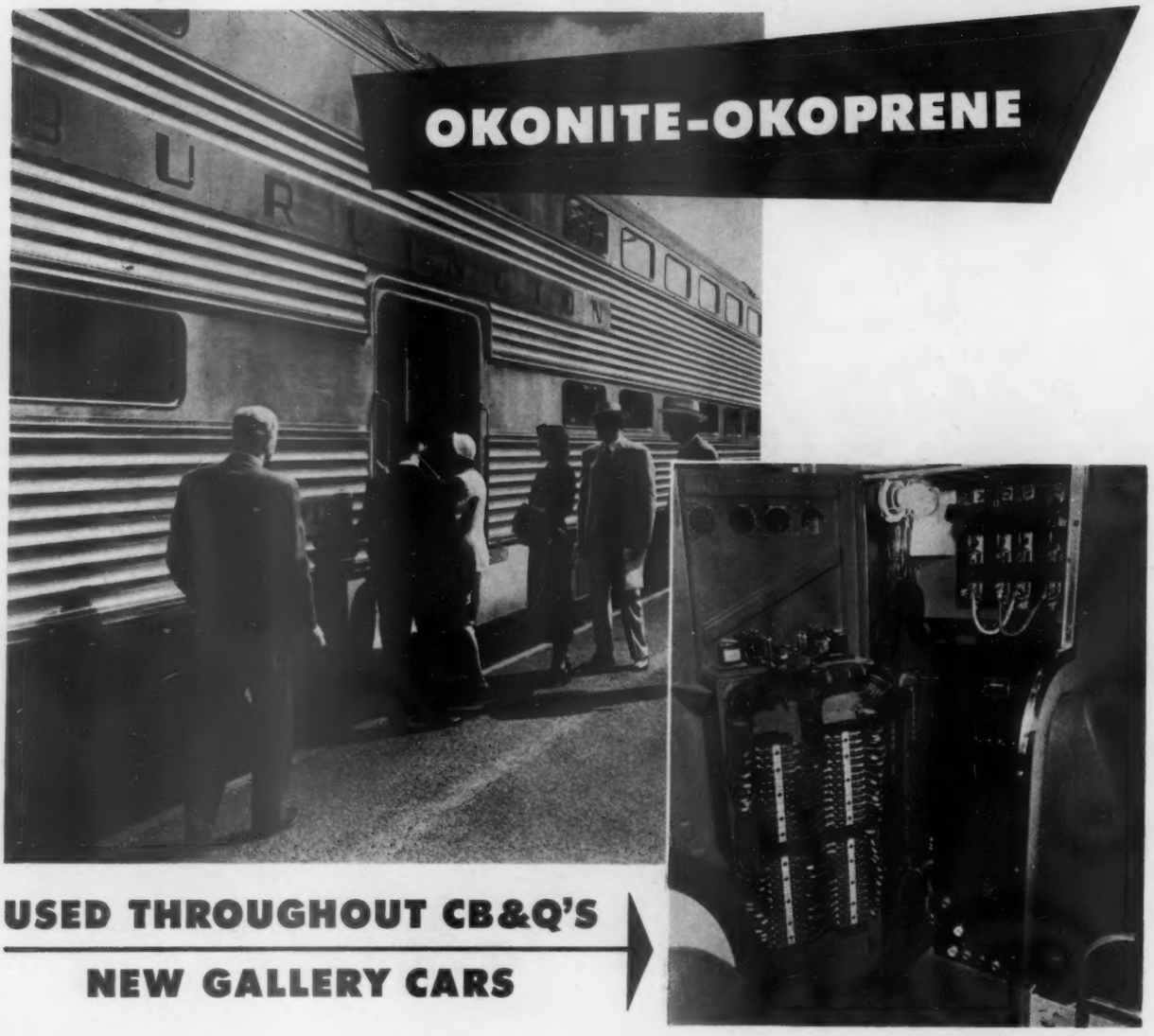

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RAILWAY AGE
EDITORIAL COMMENT

PLENTY OF REASONS FOR OPTIMISM ABOUT THE RAILROADS, PROVIDED - - -

Nobody in or around the railroad business needs to be told that the year 1950 ended a lot better than it started, traffic-wise and earnings-wise; nor does anyone require a reminder that immediate prospects for traffic and earnings growth are better than they have been at any time since World War II came to a close. Railroad stocks are pushing upward toward 80 on the Dow-Jones index — a higher figure than has been attained at any time since 1931. For these and other kindred reasons, people who own railroad securities, or who are on the railroads' payroll, or who sell equipment and materials to the railroad industry, have greater cause for relief at the current relative safety of their savings, their jobs, and their markets, than at any time since World War II ended.

Investment Anemia

Once again, the nation is turning to its railroads to save it in a time of *critical military need for transportation,* and the railroads are coming through—although, obviously, they are not going to exhibit as much reserve of capacity and strength as they would have come up with, had their earnings in the years since World War II been permitted to bear any decent comparison to those of other important industries.

Let it not be forgotten that *all* the Class I railroads in the entire country in 1949 and again in 1950—with all their tremendous capital investment—earned considerably less net income than was earned by a single one of the nation's great automobile manufacturing companies. Investors can read earnings statements. They know that —except for equipment trust certificates, gilt-edged bonds, and the equities of a handful of railroad companies— any savings they put into the railroad industry are probably a lot less safe and will likely earn them a much smaller return than almost any other investment outlet open to them. The consequence is that the railroads have been suffering from investment anemia—too little oats to build up the iron horse's strength to the degree needed by him if he is to haul easily the load which is now being put upon him.

This utterance may sound dangerously close to an admission that the railroads are not "ready" for the job which confronts them. On the contrary, they are ready for all the vitally important military duties they have been and will be called upon to perform. There may be, however, some delay in their accommodating all the upturn in traffic which some shippers may suddenly insist that they handle—not because they want to give their business to the railroads, but simply because the railroads have always heretofore been on hand with stand-by capacity to meet the occasional extra requirements of occasional customers. The railroads have always provided the trains to haul the people on the foggy days when the airplanes don't run, and to move the freight in icy weather while the trucks are waiting for the taxpayers to sand the highways. If, then, the railroads should turn up just a little shy of meeting all the demands of passengers who come around only in foul weather, or shippers who offer them only that part of their tonnage which is bulky or dirty or which involves one-way-empty movement, that would doubtless constitute a serious inconvenience to these customers—but, after all, whose fault would it be?

Socialization of Earnings

A public utility is supposed to prepare itself to accommodate peak and emergency loads—but most of the public utilities have a monopoly in their territory, and can collect in full from their customers the cost of maintaining "stand-by" facilities their patrons may require. The utilities are permitted to charge the customer with an uneven and undependable load a higher unit rate than they provide for the steady users of their service. With similar latitude in charging practices, the railroads would doubtless have had funds with which to provide

themselves with more "stand-by" equipment and other facilities than they have been able to purchase in the years since the war.

As it was, however, they exerted themselves to the utmost of their resources to improve and increase their facilities, and have spent $5 billion on capital account since World War II ended, or just about exactly $1 billion a year. What other industry in the country has sunk, or would sink, new capital into its plant and equipment at any such rate as this—when capital already invested in its business was earning less than 3½ per cent, which is the average rate of the railroads' earnings since 1945?

We do not in this country have socialized *ownership* of the railroads, but we do have, to a very large degree, *socialization of earnings*. That is to say, the investors hold the title to the capital—at least until the company goes through the Interstate Commerce Commission's wringer—but the earnings from the investment are shared by everybody, leaving only a trace for the owners.

Investors Are Informed

It could probably be cogently argued that all the damage to private property that could be accomplished by out-and-out socialization has already been done to the railroads—but that, by continuing the legal trappings of private *ownership*, the impetus toward constantly increased efficiency which occurs only under capitalism has been retained. Thus, in effect, it might be concluded that we have one of those perfect mergers—capitalism and socialism amalgamated, "retaining all the advantages of each." The hitch, however, lies in the fact that the investors are quite aware of what is going on; and it is that awareness which accounts for some of the shortages and imperfections in railroad service which otherwise would not be there.

While there is a great deal of truth in the slogan, "the railroads are ready," is it not a course of doubtful wisdom to overemphasize that slogan? If people are led to believe that the railroads can give practically perfect service with the kind of earnings the industry has had in the past twenty years what inducement is offered the public for favoring more generous earnings? Let it not be forgotten that the brothers are quicker than lightning, at the faintest signs of prosperity, in their alacrity to take it all away. Then, too, the intelligent politicians who have become slowly and sorrowfully aware that the transportation situation has to have a legislative housecleaning are only too happy when offered the slightest plausible excuse to shirk their disagreeable duty, permitting them to run away happily, instead, on a quest for some easy votes. (Note how, for instance, within the last month, that even so high-minded a public servant as Senator Taft has let it be known that he is weakening in his opposition to the St. Lawrence project.) A few months of favorable traffic and earnings even tempt some railroad men, and not just those of the rank and file either, to believe that "happy days are here again." The observation frequently repeated in the late thirties will be remembered—to the effect that "there's nothing wrong with the railroads that a little more traffic won't cure." World War II came and the traffic with it, but the cure failed to stick. The pressure for definitive correction of the government's policies which had brought chaos in transportation was lifted—the result being that, soon after the war ended, the pleasantly forgotten symptoms of the malady of the thirties came back with redoubled fury. Nobody with a memory which goes back much over ten years will want to repeat the nearly fatal mistake of relinquishing efforts to correct the basic troubles in transportation, simply because a military emergency has once more temporarily obscured them.

On the contrary, the very fact that efficient and well-nourished railroads are so necessary to the country's military safety constitutes the very best of reasons for increasing, rather than diminishing, efforts to remove the causes which have kept the industry sick. The time to tell the public how to assure itself of healthy railroads is when the public is keenly aware that healthy railroads are useful and necessary. In his customarily thorough review of the past year's transportation developments, appearing on another page in this issue, Dr. Julius H. Parmelee reminds us that Congress' Joint Committee on the Economic Report estimated, about a year ago, that cumulative "deficiencies" in the country's highway system would cost the enormous sum of $41 billion to correct. At the same time, he draws attention to the appropriation of $412 million in federal funds alone for the improvement of highways in the fiscal year 1951—with an additional $208 million for improvements to rivers and harbors and $230 million for the promotion of air transportation. In an interview in U. S. News magazine for December 29, 1950, U. S. Roads Commissioner T. H. MacDonald stated that $3.7 billion was spent on highways in 1949—54 per cent (or approximately $2 billion) being on construction. In the same year the nation's railroads spent $330 million on additions and improvements to track and structures—or only about one-sixth as much as was spent by the taxing authorities on highway construction in the same year.

Reasons for Optimism

From the standpoint of the public interest, the nation should get needed additions and improvements to its railroad plant with the same ease and assurance that desirable new facilities are provided for highway, air and barge transportation. However, such improvements to railroad property, no matter how desirable or necessary in the public interest, are never going to come along as readily as comparable improvements do for trucks, planes and barges, as long as political appropriations turn the trick for the last-named agencies, while the railroads have to rely solely on substandard earnings for their capital needs.

The reason for optimism for the immediate outlook for the railroads is apparent in their current earnings and traffic prospects. The reason for optimism for their long-run outlook lies in the utter absurdity and unwork-

ability of the governmental policies which are the sole reason why the railroads are not just as prosperous as any other large and necessary industry—e.g., the electric utilities or the manufacturing of automobiles. There could be no more productive expenditure of current increased earnings than that necessary to carry on an adequate educational campaign to induce the public to take the steps necessary to assure themselves of modern and up-to-date railroad service, under private ownership.

Good Service Must Be Publicized

Such a campaign, of course, would be ineffective unless the railroads were, at the same time, doing the very best possible job under the circumstances to serve their customers—while making sure that their successful efforts in this direction were not going unnoticed. It was with the purpose in mind of contributing substantially to this last-named objective that this paper during 1950 inaugurated a long-range program of publicizing outstanding specific improvements in freight service and facilities by specific railroads—a program we intend to continue and intensify to the best of our means. When railroad customers are brought to a full realization of the railroads' demonstrated determination to serve them to the utmost of their resources—and when it is clearly and widely understood that a political framework to permit railroad prosperity is going to be promptly and infallibly reflected in the quality of railroad service—who can doubt that the railroad industry will, finally, have rounded the corner?

THE LONG ISLAND—A PORTENT?

Perhaps the most significant event in 1950, from the standpoint of railroad owners and management, was the persecution by politicians of the trustees of the Long Island Railroad after it had suffered two collisions with large fatalities to passengers. Many railroad men discern in what happened on the Long Island, and the consequent "smearing" of its management, a prototype of the fate which could easily befall the managements of other railroads which might suffer some spectacular failure in safety or service—either by pure mischance or as the culmination of many years of financial starvation.

The Long Island, of course, constitutes an extreme case, because of its preponderance of inherently unprofitable commuter traffic, and because of its misfortune in falling so largely under the jurisdiction of a public service commission with a traditional hostility toward reasonable corporate earnings. Nevertheless, there are other railroads, too, which are unprofitable despite considerable density of traffic. There are comparatively few railroads which could claim complete immunity from the virus which attacked the Long Island—i.e., earnings inadequate to support the optimum degree of service expansion and improvement.

The most noteworthy characteristic of the situation has been the complete absence of any evidence of gratitude for the below-cost service which the railroad has supplied for many years at the investors' expense. There has been plenty of snarling at alleged "substandard" service, but with no account being taken of the fact that, considering the level at which the service has been priced, performance was a great deal better than could be economically justified. The behavior of the critics of this railroad falls into the "mass-man" pattern—the modern politician's puppet, who is responsible for most of the trouble in the world today; and whose behavior was prophetically charted by the Spanish philosopher Ortega over 20 years ago.

"Mass-men" are the product of modern specialization —people (including most of the so-called "intellectuals") who know one narrow technique intensively, and hence fancy themselves well-informed, while actually being colossal ignoramuses concerning practically everything beyond their limited experience. As a consequence of the growth in numbers and power of these "mass-men," the world suffers from what Ortega calls "the sovereignty of the unqualified individual"—a fellow who believes that the comforts of modern life are something "natural," like the air he breathes. If anything happens to curtail these comforts, the "mass-man" like a spoiled child is furious and reacts in the only way he knows how—that is, he lynches somebody. When the bread supply is unsatisfactory, as Ortega points out, the "mass-man" burns down the bakery.

Every aspect of the reactions of New York politicians, demagogic publicists, and the thoughtless part of public opinion to the Long Island situation has paralleled completely Ortega's analysis of the kind of behavior to expect from the "mass-man." Railroad management, and everybody else in any position of responsibility, is having to deal more and more with this fellow—hence the more they can learn about him, the better equipped they will be to cope with his dismaying behavior.

Ortega's "spoiled child" analogy goes a long way, also, toward explaining the behavior pattern into which the railway unions have been seduced by politics. Nothing adverse is ever allowed to happen to them, no matter to what lengths they go. They became dissatisfied with what they could get by direct negotiations with their employers, so they resorted to "emergency boards"—and got additional concessions. In due course, emergency board awards did not seem generous enough, so they insisted upon post-award negotiations at the White House, punctuated by strikes and strike threats—and by this technique they exacted still further concessions. Now they have advanced a step further, turning down a settlement negotiated at the White House—doubtless with every reason to believe that still further concessions will be forthcoming. If there is anything that a study of the behavior of the "mass-man" discloses, it is that continuing appeasement is not an effective method of inducing him to behave more reasonably.

A Review of RAILWAY OPERATIONS in 1950

By J. H. PARMELEE

Vice-President and Director
Bureau of Railway Economics
Association of American Railroads

Railroads of the United States in 1950 dealt with many complex problems. The one vital problem was that of readying their facilities and operations to meet the potential requirements of an economy expanded in the interest of national security. For ninety years, railroads have played a significant role in wars and other national emergencies. They did so in the two World Wars. In face of the critical international situation that unfolded throughout 1950, accentuated by the outbreak of fighting in Korea in June, they are preparing to do so once again.

The relations of free nations to those under totalitarian rule or influence were clearly deteriorating, prior to 1950. Railroad managements in 1949 began to prepare for the eventuality of further worsening of international relations. Their efforts, described in detail in later sections of this review, included greatly increased freight car and locomotive orders, with such other progressive steps as roadway, track and signaling improvements, centralized traffic control installations, and the like. Similar steps were taken at a generally rising pace during the first half of 1950, and accelerated in the second half. Railroads, along with general industry, are ready for action, shown by the fact that from the very beginning of the Korean imbroglio they met all the speeded-up transportation requirements of the armed forces.

Another problem, also increasingly serious, lay in the field of railroad management-labor relations. Rare-

ly, if ever, have the railroads been called upon to meet so many demands of organized labor as confronted them in 1950. Details of these demands, encompassing both wage rates and working conditions (such as the 40-hour week in yard service), are outlined in a later section. Negotiations growing out of these demands, served on the railroads by both the operating and non-operating groups and by almost every class of employees, continued with hardly a break from January to December.

Several Presidential emergency boards rendered reports during the year, whose recommendations were accepted by the railroads in all cases, but by labor in no case. These developments led to prolonged conferences at Washington, under the aegis of the National Mediation Board or the White House, or both. They were brought about in large measure by the unwillingness of labor to accept the findings of emergency boards set up under the terms of the Railway Labor Act. Compromise arrangements, suggested by government representatives, were accepted by the railroads but for the most part were turned down by labor. In a few cases, temporary strikes were called on separate properties, in an effort by certain labor organizations to force the issues on all railroads. Threat of a nationwide strike of conductors and trainmen, designed to enforce their demands by so-called "economic" pressure, resulted in government seizure of rail properties on August 27. Finally, on December 21, the White House announced the signing of a three-year agreement between the railroads and the four operating brotherhoods, the details of which are outlined below, but the unions have rejected this also.

Traffic and financial results of rail operation, which during the first half of 1950 displayed some of the depressed characteristics that existed throughout the greater part of 1949, showed substantial improvement in the second half. The gains in 1950 grew in part out of a relative absence of the extended strikes and work stoppages that in 1949 plagued the coal, steel, automobile, electrical, and other industries, or parts thereof. In considerable part, also, the increased traffic of the second half resulted from the intensified remobilization defense program. This intensification, brought into sharp focus by declaration of a state of national emergency on December 16, will in 1951 shift much production from civilian to military purposes. To that extent, it may not increase total output, but will change its character, composition and distribution. At the same time, the aggregate of all forms of production and services will probably increase, especially after mobilization programs have acquired momentum. Railroad traffic has already felt the impact of these programs, and will in all likelihood continue to do so.

Rate of Return Remains Low

Despite the improved earnings experienced in 1950, the rate of return on net investment for the year was a modest one, probably between 4¼ and 4½ per cent. This return is based on an anticipated net railway operating income that will take into account a substantial accrual of back mail pay, much of which was applicable to the years 1947, 1948, and 1949.

An outstanding event of 1950 was the investigation of land and water transportation, carried out under the provisions of Senate Resolution 50 by the Senate Committee on Interstate and Foreign Commerce. The hearings conducted by that committee, through a subcommittee, are described in a later section. No more thorough survey of the position of the railroads in the national economy has ever been made, nor have the railroads previously submitted so comprehensive a statement of their competitive difficulties, their regulatory handicaps, and their traffic and financial trends and prospects. In addition, they offered specific suggestions as to how all these matters can and should be remedied, through changes in legislative, regulatory, and promotional policies, and through more effective organization of government agencies dealing with transportation.

A Constructive Report Awaited

It is hoped that the Senate committee will issue a report, early in 1951, which will register a forward step in the direction of constructive solution of the many problems the railroads described in painstaking detail in the course of the hearings.

Later sections of this review deal with significant developments in the railroad and general transportation field during the calendar year 1950. The statistics cited are those of railways of Class I, and are derived in part from reports of the Interstate Commerce Commission. Carloading and equipment statistics, and certain other data, are compilations of the Association of American Railroads. Entries for the year 1950 are necessarily estimated in part.

RAILROADS PREPARE FOR NATIONAL EMERGENCY

Railroad preparations for meeting the country's demand for efficient and economical rail transportation service, under normal as well as under emergency conditions, have been under way since the close of the second World War. Faced with the need for rehabilitating a railroad plant subjected to severe wear and tear under wartime pressure, railroad improvement programs, since the beginning of 1946, have involved expenditure of more than $5 billion for additions and betterments.

Between January 1, 1946, and the close of 1950, approximately 333,000 new freight cars were installed, and at the close of 1950 considerably more than 100,000 additional freight cars were on order. More than 6,700 diesel locomotives (complete as operated) have been installed since the beginning of 1946, and 1,640 diesel locomotives are still on order. Large expenditures have also been made for maintenance deferred during the war period, due to limitations on materials and manpower.

Beginning in the latter part of 1949, railroads took further steps to meet the prospective increase in demand for rail service resulting from the uncertain aspects of the international situation. These preparations included,

among other things, a stepping up of freight car construction and repair programs.

Following the outbreak of fighting in Korea, member roads of the Association of American Railroads, meeting in Chicago in July, unanimously adopted an even more comprehensive program. This action was similar to that taken by the railroads in 1923, when they were experiencing car shortages and the need for rehabilitation of the rail plant following the first World War, and also to that taken by them in 1939, when confronted with the situation created by the outbreak of the second World War. In both those instances, the railroads laid down and carried out programs which met the impending requirements.

A Five-Point Program

The July program has five principal features, each designed to play an important part in the provision of adequate rail transportation service: (1) increase in freight car ownership; (2) reduction in number of bad-order cars; (3) greater utilization of equipment; (4) increased operating efficiency; and (5) shipper-receiver cooperation.

The goal set for building up the railroad freight car supply is an increase in car ownership from 1,727,873 cars of all types (as of June 1, 1950) to 1,850,000. Attainment of this objective will call for an output of 10,000 new freight cars per month for a considerable period. Such a monthly output will offset monthly retirements and eventually bring freight car ownership to the desired total.

Recognizing that the serviceable freight car supply can be increased more quickly through repair of existing bad-order equipment than through construction of new cars, the railroads undertake to reduce the bad-order percentage to not more than five per cent of the ownership of any class of cars on any railroad.

Another objective of the program is to obtain a national average of 50 miles per freight car per day. This average is based not only on cars in movement but also those awaiting loads, being loaded or unloaded. The average (for serviceable freight cars) for the first eight months of 1950 was 45.3 miles per day.

The railroads also undertake to obtain the most efficient use of freight cars. This is to be attained by avoidance of delays in terminal or road haul movements; heavier loading and prompt unloading of company materials; prompt repair of equipment, particularly where light repairs are involved; prompt placement of embargoes where necessary to relieve railroad congestion or reduce accumulation of cars in hands of consignees; and close observance of Car Service Rules as a means of avoiding unnecessary empty mileage and assuring car owners proper usage of their cars.

Finally, cooperation of shippers and receivers of freight is sought, inasmuch as freight cars, on the average, are in their hands about half the time. Shippers and receivers are urged to load and unload quickly; furnish billing of loaded cars promptly; load as heavily as practicable; unload cars completely, to make them available for reloading without delay; and assist in observance of Car Service Rules.

Developments under the Program. Marked progress has already been made in carrying out the program. Freight cars on order on January 1, 1950, totaled 14,368 units; by July 1, this total had risen to 40,122; by December 1, the number had increased to 115,847. In the meantime, the number of bad-order cars, or freight cars awaiting repairs, dropped sharply from a 1950 peak of 140,929 cars, or 8.1 per cent of total car ownership, on February 1, to 93,278 cars on December 1, representing 5.4 per cent of total ownership. This reduction in bad-order equipment was accomplished in some cases by expansion of forces and extension of working time in repair shops.

Freight cars ordered during the first 11 months of 1950 totaled 138,272. This compares with a net total of 6,215 cars ordered in the corresponding 11-month period of 1949. Of the 11-month total for 1950, 99,723 cars were ordered in the five months July to November, inclusive.

These and other equipment matters, together with progress in railroad operating efficiency during 1950, are considered at greater length in later sections.

The administrator of the National Production Authority announced on October 26, 1950, establishment of a program designed to provide steel products in sufficient quantities during the first quarter of 1951 for manufacture of new freight cars at the rate of at least 10,000 cars a month, as well as for adequate maintenance of freight cars. The program (Supplement 1 to N.P.A. Order M-1) is expected to provide 310,000 tons of steel products per month to railroads and commercial car builders.

DEFENSE ACTIVITIES TURNED TRAFFIC TRENDS UPWARD

Table 1 shows comparative statistics of freight and passenger traffic for 1929 and each year from 1942 to 1950, entries for 1950 being partially estimated.

Increased freight traffic during the last eight months of 1950 was encouraging, preliminary totals for the year indicating increases of over 8 per cent in carloadings and 11½ per cent in ton-miles. The general downward trend in passenger traffic tapered off about mid-year, although the year's volume was less than in 1949.

Revenue carloadings. Loadings of revenue freight in 1950 approximated 38.9 million cars, an increase of nearly 3 million over 1949, or 8.2 per cent.

Table 1—Comparative Traffic Summary

Revenue carloadings (thousands)			
1950	38,900	1945	41,918
1949	35,910	1944	43,408
1948	42,719	1943	42,440
1947	44,502	1942	42,771
1946	41,341	1929	52,828
Revenue ton-miles (millions)			
1950	587,000	1945	681,001
1949	526,500	1944	737,246
1948	637,917	1943	727,075
1947	654,728	1942	637,984
1946	591,982	1929	447,322
Revenue passenger-miles (millions)			
1950	31,900	1945	91,717
1949	35,095	1944	95,549
1948	41,179	1943	87,820
1947	45,921	1942	53,659
1946	64,673	1929	31,074

Loadings for each of the eighth commodity groups are shown in Table 2, together with the increase or decrease (D) compared with 1949. Five of the eight commodity groups increased. Coke showed the greatest rate of increase over 1949, 23.5 per cent. Coal loadings increased 16.4 per cent, that industry being relatively free from the extended and repeated work stoppages which proved so costly in 1949. The miscellaneous group, mostly manufactured products, increased approximately 1.7 million cars, or 10.0 per cent. In terms of cars, the increase in this group was the greatest of all groups. Grain loadings were off 5.0 per cent from 1949.

Table 2—Carloadings by Commodity Groups

	1950 (000)	Increase over 1949 Number (000)	Per Cent
Coke	726	138	23.5
Coal	7,240	1,022	16.4
Ore	2,530	319	14.4
Forest products	2,213	261	13.4
Miscellaneous	18,936	1,716	10.0
Grain	2,454	D 129	D 5.0
L.C.L.	4,267	D 321	D 7.0
Livestock	490	D 61	D 11.1
	38,856	2,945	8.2

Revenue ton-miles. Freight traffic, measured in ton-miles, aggregated 587 billion in 1950. This was an increase of approximately 61 billion over 1949, or 11.5 per cent. The volume of freight service for 1950 was less than that of any year from 1942 to 1948, but was greater than in any year prior to 1942. It exceeded the 1940 level by 57 per cent, and was 31 per cent above the prewar peak attained in 1929.

Passenger-miles. Revenue passenger traffic continued its postwar decline, passenger-miles for the year being 31.9 billion, 9.1 per cent below 1949. The downward trend continued to level off, however, and the last quarter of the year showed an actual increase over the corresponding three months of 1949.

As in the case of freight traffic, railroad passenger traffic for 1950 was above prewar levels. The volume exceeded that of 1940 by 34 per cent, and was greater than in 1929 by 2.7 per cent.

Monthly and Quarterly Trends. Growing tension in the international situation, accentuated by Korean events from June on, exerted its stimulus on both rail freight and passenger traffic, and particularly on freight volume. With the exception of March, in which ton-miles for 1950 exceeded those for March 1949 (when a coal strike was in effect the last half of the month), freight traffic levels ran below those of 1949 through April, and above those of 1949 in each of the remaining eight months. The ton-mile trends for both years, by months, are traced on a chart in the next column.

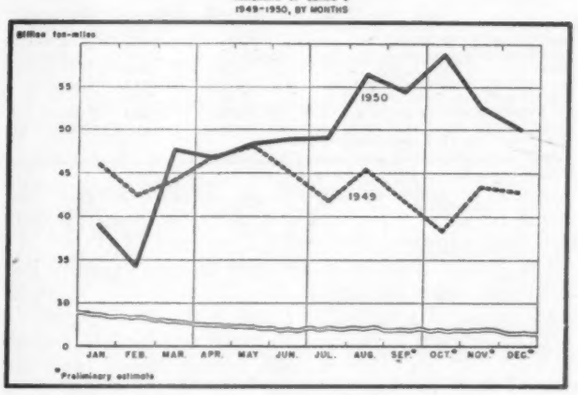
Passenger-miles ran below those of 1949 in each of the first nine months of 1950, through September, with the percentage of decrease showing a gradually downward tendency from June to September. The final three months of 1950 saw a reversal of the trend, each of them showing increases over the corresponding months of 1949. The passenger-mile trends for both years, by months, are traced on a chart in the next column.

Combining the several months into quarters, the percentage increase or decrease for each quarter, compared with 1949, is shown in the table (adjacent column) for both freight and passenger traffic.

Quarter	Per Cent Increase or (D) Decrease, 1950 vs. 1949 Ton-miles	Passenger-miles
1st	D 8.4	D 18.1
2nd	2.9	D 14.0
3rd	24.1	D 6.7
4th	29.9	3.5
Year	11.5	D 9.1

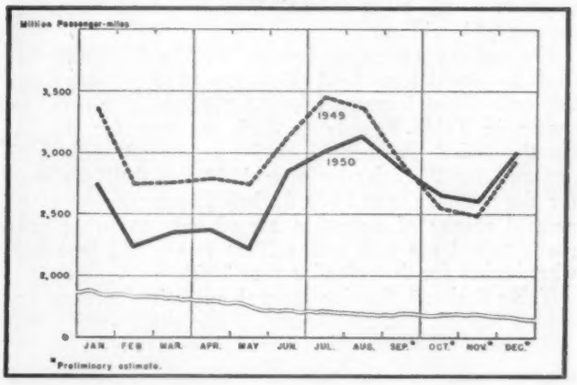
REVENUE TON-MILES

RAILWAYS OF CLASS I
1949-1950, BY MONTHS



REVENUE PASSENGER-MILES

RAILWAYS OF CLASS I
1949-1950, BY MONTHS



FINANCIAL RESULTS WERE BETTER IN 1950

Railroad revenues, expenses and net earnings all increased in 1950. The increase in revenues was greater, both actually and relatively, than was the increase in expenses, resulting in a substantial rise in net earnings.

The four tables that follow show significant income account items for the first 10 months of 1950 and comparable statistics for corresponding periods of 1949 and 1948. Table 3 is the condensed income account.

Operating revenues for the first 10 months of 1950 increased 7.3 per cent over the same period of 1949. This

Table 3—Condensed Income Account

	First 10 months		
	1950 (millions)	1949 (millions)	1948 (millions)
Total operating revenues	$7,683	$7,157	$8,040
Total operating expenses	5,795	5,775	6,185
Operating ratio (per cent)	75.43	80.69	76.94
Taxes	923	700	857
Net railway operating income	815	543	854
Rate earned* (per cent)	3.99	2.86	4.24
Net income after charges	575	302	582

*Rates shown are for 12-month periods, ending October 31, 1950, and December 31, 1949 and 1948, respectively.

was due in large measure to an increase in that 10-month period of 9 per cent in ton-miles of freight traffic. Operating expenses increased 0.3 per cent.

The greater increase in revenues than in expenses led to a lower operating ratio in the 1950 period — 75.4 per cent, compared with 80.7 per cent in the 1949 period.

Taxes accrued in the first 10 months of 1950 increased 31.9 per cent. By kinds of taxes, federal income taxes increased $207 million, reflecting both increased net earnings and increased tax rates. This one item accounted for much the greater part of the increase of $223 million in the tax total. Payroll taxes increased $4 million, reflecting increased average employment and higher wage rates. All other federal, state and local taxes increased $11 million.

Net railway operating income for the 10-month periods increased from $543 million to $815 million. Even this substantial increase brought the rate of return, as shown in Table 3, only to 3.99 per cent for the 12 months ended October 31, 1950, compared with 2.86 per cent for the calendar year 1949 and 4.24 per cent for the calendar year 1948. In brief, improvement in financial results of operation served only to bring railroads to a 4 per cent return. That return will be somewhat higher for the calendar year 1950.

Table 4 shows the five general operating revenue accounts for the first 10 months of the years 1948, 1949 and 1950.

Table 4—Operating Revenues

	First 10 months		
	1950 (millions)	1949 (millions)	1948 (millions)
Freight	$6,433	$5,880	$6,637
Passenger	668	722	799
Mail	200	180	158
Express	64	63	100
All other	318	312	346
Total	$7,683	$7,157	$8,040

Passenger revenue was the only general revenue account to show a decrease in 1950. Due to the falling off in passenger traffic, and in spite of increased passenger fares effective in the East throughout the year, passenger revenue declined 7.5 per cent in the first 10 months. Freight revenue increased 9.4 per cent, or at about the same rate as the increase in ton-miles for that period.

Mail revenue increased 11.2 per cent. The mail revenue item for 1950 included approximately $20 million of back mail pay, accrued by certain railroads in their September and October accounts.

The express revenue shown in the railway account, which increased 1.1 per cent, represents express privilege payments received by railroads from the Railway Express Agency, being the distribution of the net revenue of that agency after paying its own expenses and taxes. Gross revenue of the R.E.A. for the first 9 months of 1950 was approximately $228 million.

Table 5 summarizes railroad operating expenses, by general accounts, for the 10-month periods of the several years.

Three of the principal expense accounts in the 1950 period were less than in the 1949 period. Maintenance-

Table 5—Operating Expenses

	First 10 months		
	1950 (millions)	1949 (millions)	1948 (millions)
Maintenance of way and structures	$1,069	$1,094	$1,126
Maintenance of equipment	1,393	1,342	1,404
Traffic	159	162	160
Transportation	2,857	2,850	3,161
General and other	317	327	334
	$5,795	$5,775	$6,185

of-way expenses, traffic expenses, and "general and all other" expenses showed small decreases. On the other hand, maintenance-of-equipment expenses and transportation expenses were slightly greater. Taking the two maintenance accounts combined, there was an increase of $26 million, due principally to intensified freight car repair programs. It is probable that for the year 1950 as a whole, all of the expense accounts (except "general and all other") will show increases over 1949.

Table 6 shows the rate of return earned on net property investment. The rate is shown for each year from 1940 to 1950. Entries for 1950 are for the 12-month period ended October 31, 1950.

Table 6—Rate of Return on Net Property Investment

	Net railway operating income (millions)	Rate of return—per cent on investment after depreciation
1950*	$ 960	3.99
1949	686	2.86
1948	1,002	4.24
1947	781	3.41
1946	620	2.75
1945	852	3.77
1944	1,106	4.73
1943	1,360	5.75
1942	1,485	6.34
1941	998	4.28
1940	682	2.94

*12 months ended October 31, 1950

The rate of 3.99 per cent, shown for 1950, is likely to be somewhat greater for the calendar year. Whatever the final figure, it will be a modest return for the railroad industry.

WAGES AND LABOR UNREST CAUSED GRAVE CONCERN

Railroad employment in 1950 averaged 1,222,000, about 30,000 more persons than were employed by the industry in 1949, but 105,000 fewer persons than in 1948.

The railroad payroll in 1950 approximated $4,600 million, compared with $4,419 million for 1949, and $4,769 million for 1948.

Table 7 shows for 1950, and for each of the preceding ten years, the average number of railroad employees, total payroll, annual earnings per employee, and straight-

Table 7—Employees and Their Compensation

Year	Average number	Total payroll (millions)	Average annual earnings of employees	Average straight-time rate per hour (cents)
1950(est.)	1,222,000	$4,600	$3,764	*156.9
1949	1,192,019	4,419	3,707	144.1
1948	1,326,597	4,769	3,595	131.3
1947	1,351,863	4,352	3,219	117.5
1946	1,359,263	4,171	3,068	111.7
1945	1,419,505	3,862	2,721	93.3
1944	1,414,776	3,858	2,727	93.0
1943	1,355,114	3,521	2,598	89.3
1942	1,270,687	2,932	2,307	83.5
1941	1,139,925	2,332	2,045	76.9
1940	1,026,848	1,964	1,913	74.2

*First 9 months of 1950

time rate of pay per hour. The entries for 1950 are partially estimated.

Annual earnings of railroad employees averaged $1,913 per man in 1940, increased to $3,707 in 1949, and averaged $3,764 per man in 1950. This was the fifth successive year in which annual earnings broke all previous records.

The straight-time rate of pay of railroad employees averaged 74.2 cents per hour in 1940, increased to 144.1 cents per hour in 1949, and further increased to 156.9 cents per hour during the first nine months of 1950. This last average fully reflects the increased wage rate for non-operating employees which resulted from establishment of the 5-day (40-hour) week for those employees on September 1, 1949. It does not reflect increases granted employees represented by the Switchmen's Union of North America and the Railroad Yardmasters of America. Those increases, in the main, became effective on October 1, 1950. Nor does the 9-month average reflect the wage rate increases recommended by an emergency board for yard employees represented by the conductors' and trainmen's organizations.

Proposals for 40-Hour Week

At the beginning of 1950, the railroads had before them a proposal, advanced by the Order of Railway Conductors and the Brotherhood of Railroad Trainmen, to amend existing agreements to provide for a 5-day 40-hour work week for *yard* employees without reduction in pay. The brotherhoods also requested, among other things, time and one-half pay for Sunday and holiday work for *yard* employees and changes in pay schedules and working rules for *road* conductors and trainmen. Those demands, originally served on March 15, 1949, ran through the usual conference procedures and went to the National Mediation Board on January 16, 1950. Mediation terminated on February 14, and the dispute was ultimately submitted to an emergency board. The emergency board, reporting on June 15, recommended a 5-day 40-hour basic work week for *yard* service employees with an increase in basic rates of 18 cents per hour, both to become effective October 1, 1950. The board recommended withdrawal of the major proposals relating to changes in pay schedules and working rules for *road* men. The recommended increase of 18 cents per hour for yard men was in lieu of the 20 per cent increase demanded—31 cents per hour. The board found that opportunities for overtime work would serve to offset any substantial reduction in take-home pay occasioned by the shorter week.

The conductors' and trainmen's organizations rejected the recommendations of the board, and called a five-day strike on five railroads, which terminated on August 25 and 26.

On August 23, however, the same two unions called a nationwide strike for August 28. As President Truman was reported to have said, the nationwide strike call was sudden and unexpected and was announced within an hour after assurances had been given that no general strike would be called for the time being. Faced with a complete stoppage in rail transportation service, the President ordered government seizure of the roads on August 27, 1950. The secretary of the army took over on that date.

On August 19, 1950, just prior to the five-day strike, Presidential Assistant John R. Steelman suggested a settlement which included not only the recommendations of the emergency board, but a three-year settlement and a moratorium on wages and rules. In consideration of the three-year peace agreement, both yard and road employees represented by the conductors' and trainmen's organizations would receive an immediate additional increase of five cents an hour and an automatic quarterly wage adjustment of one cent an hour for each one point increase in the cost-of-living index. This meant that *yard* employees would receive a total wage increase of 23 cents an hour instead of the 18 cents recommended by the board, and *road* employees would receive an immediate increase of five cents an hour instead of no increase. The railroads agreed to the suggested settlement, but it was rejected by the two unions.

White House Negotiations

On November 1, 1949, the Brotherhood of Locomotive Firemen and Enginemen had requested for firemen (helpers) engaged in yard, transfer, belt line, and hostler service a 5-day 40-hour work week for which employees would receive the equivalent of pay for 48 hours, with time and one-half for holiday work.

On January 6, 1950, the Brotherhood of Locomotive Engineers served notices for a 20 per cent wage increase for engineers in yard service, time and one-half pay for holidays, guarantees to regular and extra men in both yard and road service, and expenses while away from home for road engineers. The request did not specifically seek penalty pay for days worked by yard engineers in excess of five per week, and in that respect differed from the 40-hour week proposals of the other operating groups.

On November 3, 1950, the B. of L. E. served notices on behalf of all engineers in road service for an increase of 20 per cent in basic daily rates, with a minimum increase of $2.80 per basic day. This demand was served while negotiations were in progress regarding their January 6 demands.

In October 1950, the Brotherhood of Locomotive Firemen and Enginemen, Order of Railway Conductors, and Brotherhood of Railroad Trainmen announced they would demand a further wage increase of 35 cents per hour for all employees they represent.

On November 20, Dr. Steelman inaugurated conferences with representatives of the conductors, trainmen, engineers and firemen, to consider their pending demands. While these conferences were in progress, yard trainmen beginning December 11 initiated "wild-cat" strikes at several important rail centers. President Truman, in a radio address on December 15, termed the strikes "a danger to the security of our nation," and "unlawful." The Army in the meantime obtained temporary restraining orders against the trainmen, and took steps to obtain contempt citations. The strikes, under pressure of strong public disapproval, soon petered out.

Joint conferences at the White House with representatives of the railroads and the four operating unions were concluded on December 21, when a memorandum of agreement was signed which provided for an increase

of 23 cents per hour for yardmen, retroactive to October 1, 1950, another two cents per hour effective January 1, 1951, and a quarterly cost-of-living adjustment (one cent for every point increase in the cost-of-living index above 176), the first adjustment to be made as of April 1, 1951. Establishment of a 40-hour work-week was also provided for, but the short work-week was set aside until January 1, 1952.

Road service men were granted an increase of five cents per hour effective October 1, 1950, another five cents on January 1, 1951, and a similar cost-of-living adjustment. The agreement for both yard and road men was to run until October 1, 1953.

In addition, it was agreed that yard conductors and brakemen would have translated into their basic rates the daily earning minimum guarantee of 20 cents per day; car retarder operators and footboard yardmasters would receive an increased differential over the yard conductors' rate. Also the settlement was to provide for rules relating to initial terminal delays, interdivisional runs, pooling of cabooses, a reporting-for-duty rule, a switching-limit rule, and others.

The agreement was made subject to ratification by the general chairmen representing the four unions on the several railroads, and it has been rejected by them.

At the beginning of 1950, the railroads had also before them demands of the Switchmen's Union of North America, for the workers it represents, for, among other things, a 5-day 40-hour work week with no loss in weekly pay, and double time for Sunday and holiday work. Those demands went through the processes prescribed by the Railway Labor Act and were finally submitted to an emergency board, composed of the same membership as the board then hearing the conductors' and trainmen's case. The Switchmen's Union would not agree to any extension of time for the board to complete its inquiry, whereupon the board reported on April 18 that employees represented by the S. U. N. A. should be accorded the same treatment, on similar issues, as yard conductors and trainmen whose case was then being heard. The board made it clear that different treatment should not be accorded various groups of yard employees.

The Switchmen's Union declared the report of the board unacceptable, and finally called a strike on five Western railroads for June 25. Because of the threat of direct government action, the strike on four of the roads was terminated on July 6, but the strike on the Rock Island remained in effect. Then, by executive order, the President of the United States, on July 8, 1950, took over the transportation system of the Rock Island and directed the secretary of the army to operate it. The switchmen's dispute was finally settled when, at the suggestion of Dr. Steelman, an agreement on principle was reached on September 1, 1950, which provided for a total wage increase of 23 cents an hour effective October 1, 1950, a three-year peace agreement and a quarterly automatic wage adjustment of one cent an hour for each one point increase in the cost-of-living index. The settlement also provided for adoption of a 5-day work week, but the short work-week provision was set aside for a period of at least one year. This settlement was the same as the one suggested by Dr. Steelman for yard employees represented by the conductors' and trainmen's unions.

At the beginning of 1950, the railroads were conferring with the Railroad Yardmasters of America in regard to their short work-week demand. An emergency board was appointed, composed of the same members as composed the conductors' and trainmen's board. The board, reporting on June 15, recommended adoption of a basic 5-day work week, and an 18 cents-an-hour wage adjustment, but declined to recommend full maintenance of take-home pay. The yardmasters' union rejected the recommendations. The dispute was finally settled by agreement, similar to that already described for the switchmen.

On or about May 15, 1950, the Brotherhood of Maintenance of Way Employees served notices of their demand to revise and supplement existing agreements so as to provide for stabilized employment. They requested that, after 1950, the average number of employees should not fall below the number required to maintain the same employment relationship of maintenance workers to all employees as existed during the ten years 1940 to 1949, inclusive. The request also specified a certain number of months of guaranteed employment for workers hired in January of a year, in February, and so on. At the end of 1950, this demand was still before the carriers.

On October 25, 1950, fifteen cooperating unions of non-operating employees filed notices requesting an across-the-board increase of 25 cents per hour in wage rates. This demand was before the carriers at the close of the year.

In addition, the carriers had before them, at the close of 1950, demands of the Brotherhood of Railway Carmen, Dining Car Employees' Union, American Railway Supervisors' Association, and American Train Dispatchers' Association, for various changes in working rules, increased vacations, and increased wages.

MATERIAL PRICES CONSISTENTLY INCREASING

An index of railroad material prices, using the period 1935-1939 as 100, was completed by the Bureau of Railway Economics in 1950. This index was a revision of an earlier index, extending back to 1933, which utilized a different base period. The revised index also makes provision for certain products, such as diesel fuel, which have increased in importance with changes in the character of rail operations.

The index indicates a consistent rise in prices between 1939 and the overall peak (214.2) attained in December 1948. The trend was downward in 1949, but started upward again in 1950. Table 8 shows price indexes for

Table 8—Railway Material Price Index

	(1935-1939=100) Material and supplies (other than fuel)	Fuel (coal & oil)	All material
December 1, 1939	103.2	97.5	101.3
December 1, 1941	115.1	107.8	112.8
December 1, 1943	124.8	131.1	126.9
December 1, 1945	132.8	142.3	135.9
December 1, 1947	178.5	214.5	190.1
December 1, 1948	202.0	234.1	214.2
January 1, 1950	195.9	201.9	198.1
April 1, 1950	197.3	211.0	202.5
July 1, 1950	200.8	215.7	206.5
October 1, 1950	210.0	216.8	212.6

various dates from December 1, 1939, to October 1, 1950.

Comparing prices on October 1, 1950, with those of December 1, 1948, the price index for material and supplies other than fuel increased 4.0 per cent, the fuel index decreased 7.4 per cent, and the composite index for materials and fuel combined showed a decrease of 0.7 per cent.

Consistent increases took place during 1950. The composite index as of October 1, 1950, was 7.3 per cent greater than it was on January 1, the fuel index was greater by 7.4 per cent, and the material and supply index (other than fuel) showed an increase of 7.2 per cent.

Prices are at high levels today and give every indication of continuing their recent upward trend. The eleven-year rise from 1939 to 1950 (October 1) was 103.5 per cent for material other than fuel, 122.4 per cent for fuel, and 109.9 per cent for all material.

1949 RECESSION SLOWED CAPITAL EXPENDITURES AND PURCHASES

Table 9 shows gross capital expenditures of railways of Class I for additions and betterments, and for purchases of fuel, material and supplies, years 1940 to 1950.

Capital expenditures for 1950 are estimated at $1,065 million, a substantial decrease under such expenditures in 1948 and 1949, but slightly greater than the prewar high of $1,059 million expended in 1923. In any comparison between prewar and postwar years, the much higher level of prices since the war should be taken into account. During the ten years 1941 through 1950, capital expenditures aggregated $7,733 million, an average of $773 million per year.

About 73 per cent of the 1950 expenditures was allocated to equipment and 27 per cent to roadway and structures, indicating the continuing emphasis on new equipment, especially freight cars and locomotives.

Purchases of fuel, material and supplies in 1950 amounted to approximately $1,600 million, a decrease of 2.5 per cent under the corresponding total for 1949. This is the smallest total since 1946, when purchases aggregated $1,570 million.

Table 9—Capital Expenditures and Purchases

Year	Gross capital expenditures (thousands)	Purchase of fuel, material & supplies (thousands)
1950 (est.)	$1,065,000	$1,600,000
1949	1,312,200	1,641,406
1948	1,273,484	2,183,331
1947	864,689	1,909,209
1946	561,957	1,570,555
1945	562,980	1,572,404
1944	560,112	1,610,529
1943	454,282	1,394,281
1942	534,897	1,259,811
1941	543,021	1,161,274
1940	429,147	854,463

Revenue per ton-mile averaged 1.328 cents during the first eight months of 1950, and revenue per passenger-mile averaged 2.547 cents. Table 10 shows the averages for 1929, for each year from 1940 to 1949, and for the first eight months of 1950.

Table 10—Revenue Per Unit of Traffic

Year	Per ton-mile (cents)	Per passenger-mile (cents)
1950 (8 mos.)	1.328	2.547
1949	1.340	2.452
1948	1.251	2.341
1947	1.076	2.097
1946	0.978	1.947
1945	0.959	1.871
1944	0.949	1.874
1943	0.933	1.882
1942	0.932	1.916
1941	0.935	1.753
1940	0.945	1.754
1929	1.076	2.808

The 1950 ton-mile average, despite a 3.7 per cent increase in freight rates effective throughout the year 1950, but only for a portion of 1949, was slightly less than the record high established in 1949. This was due largely to heavier movements throughout the year 1950 of coal, which is handled at comparatively low rates per ton-mile. Certain downward rate adjustments by the railroads on steel and other products also contributed. Average revenue per ton-mile for 1950 exceeded the prewar high of 1.275 cents in 1921 by 4.2 per cent.

Average revenue per passenger-mile was somewhat affected by the 12.5 per cent increase in basic passenger fares on Eastern railroads, effective throughout the year. The 1950 average was higher than in any year since 1930, but lower than in any of the years 1920 to 1930, inclusive.

NO NATIONWIDE CHANGES IN RATES AND FARES

While there were no changes of major significance during 1950 in basic freight rates and passenger fares, a number of developments in the general field of rates, fares and charges took place. Some of these developments resulted in reduced transportation charges, some in increased charges, while others had not been concluded at the year's end.

Freight rates. Some progress was made in the pending class rate cases during 1950. In Docket No. 28300, Class Rate Investigation, hearings were completed and oral argument was presented in December. In Docket No. 28310, Consolidated Freight Classification, the commission adopted a tentative uniform classification, but it has not yet been finally approved. Dates of hearings in Docket No. 30416, Class Rates—Mountain-Pacific Ter-

ritory, and in Docket No. 30660, Class Rates—Transcontinental Rail, have not yet been set.

Railroads continued in 1950 to make certain downward adjustments in freight rate increases authorized in the three postwar ex parte cases. These adjustments were made to preserve market relationships in some cases, and to meet particular competitive situations in other cases. Perhaps the outstanding development of that kind was the reduction of approximately 15 per cent in rates on certain iron and steel articles made by railroads in Official territory, effective May 1, 1950.

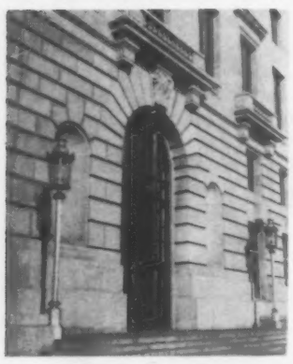
On December 1, 1950, railroads in Official territory filed a petition with the I.C.C. seeking authority to increase all freight rates and charges by 4 per cent with an increase on coal of 12 cents per net ton. Date of hearing on the petition has not yet been set.

Passenger fares. Aside from some increases in commutation fares, and introduction of special reduced fares designed to attract certain traffic, there were no changes in basic passenger fares in 1950. In December, railroads announced a special reduced round-trip fare over the holiday period for military personnel in uniform.

Mail pay. The protracted railway mail pay proceedings (Docket 9200) pending before the I.C.C. made progress during 1950. On October 11, railroads and the postmaster general signed an agreement specifying, among other things, the amount of additional pay due the railroads for transporting the mails during the period February 19, 1947, to December 31, 1950. The agreement was approved by the commission on December 4. The sum agreed to is equivalent to an average increase in mail pay rates of approximately 49 per cent over rates in effect prior to February 19, 1947. The agreement also provided for a new basis of mail pay rates to become effective on January 1, 1951. The new basis eliminates payment by the Post Office Department for return empty movement of storage mail cars, and in lieu thereof substitutes a terminal charge per car or per sack. Determination of the level of rates under the new base was left in the hands of the commission. Hearings on the matter were still in progress at the end of the year.

Express rates. In Ex Parte No. 169, decided March 6, 1950, the commission authorized the Railway Express Agency to increase rates on first and second class l.c.l. express shipments by 10 per cent.

ACTIVITIES OF THE INTERSTATE COMMERCE COMMISSION



Changes in Membership and Organization. James K. Knudson was appointed to the commission on February 14, 1950, and took his oath of office on April 20. Commissioner Knudson succeeded the late Carroll Miller for the remainder of a term expiring December 31, 1953. Commissioner Miller died in Washington on December 24, 1949, after serving on the commission for 16 years.

On February 14, 1950, the President reappointed Commissioner Richard F. Mitchell for a seven-year term expiring December 31, 1956.

The terms of Commissioners John L. Rogers and Hugh W. Cross expired December 31, and both members were reappointed for another term. The Cross appointment was confirmed by the Senate on December 14.

Col. J. Monroe Johnson was chairman of the commission during 1950. He was succeeded on January 1, 1951, by Commissioner Walter M. W. Splawn, whom the commission elected chairman for the year 1951.

The commission announced on January 12, 1950, a reorganization of its Bureau of Accounts and Cost Finding into four major sections, along functional lines. The four sections are Accounting, Field Service, Cost Finding, and Depreciation. The position of assistant director of the bureau was abolished.

Government Reparation Cases. These cases involve seventeen complaints filed with the commission by the Department of Justice, assailing rates charged on certain types of military shipments made during the second World War. According to Department of Justice estimates, the amounts involved total between two and three billion dollars. Division 4 of the commission heard testimony on five cases in 1949, and government rebuttal testimony was submitted February 20, 1950. At further hearings in 1950, the government's evidence was submitted in the remaining twelve cases. Defendants' and intervenors' testimony in the twelve cases is to be heard starting January 16, 1951.

Developments Under Reed-Bulwinkle Act. This act, which became Section 5a of the Interstate Commerce Act, was passed in 1948, to afford relief from antitrust laws with respect to agreements among carriers relating to rates, fares, classifications, and various other procedures requiring joint consideration, such agreements to be approved by the commission.

Application No. 7, filed under Section 5a on January 10, 1949, on behalf of 581 railroads seeking approval of an agreement relating to procedure for establishment or modification of per diem, mileage, and storage and demurrage rates and charges, was approved by Division 2 of the commission on February 28, 1950, subject to certain conditions. An amended agreement conforming to the conditions was executed, and filed on April 6. The Department of Justice on May 1 petitioned for reconsideration, and for reopening and rehearing. The department's petition was denied by the full commission on August 17, and on August 28 the commission approved the amended agreement, which became effective October 7, 1950.

In a report by Division 2, dated March 15, 1950, the commission approved with modifications Application No. 3, Eastern Railroads—Agreements. A commission order of August 17 denied a petition of the Department of Justice to reconsider and reverse its conclusions and findings in the matter. Modified agreements under the application were approved by the commission on August 28, and became effective October 15, 1950.

The Department of Justice on November 16 petitioned the commission to reconsider its orders of August 28, with respect to both agreements (3 and 7). No action had been taken by the commission, up to December 31.

The Western Traffic Association, whose agreement under Application No. 2 became effective December 15, 1949, applied on May 25, 1950, for certain amendments. The amended agreement was approved on August 17, and became effective September 26, 1950.

A hearing was held May 22 on Application No. 6, Southern Freight Association et al—Agreements, and briefs were filed, but the application was still pending on December 31.

So far, 28 applications (including those by railroads, motor carriers, water carriers, and other groups) have been filed under the provisions of Section 5a. These include an application (No. 21) by the Illinois Freight Association, filed on April 28, 1950, and one covering a railroad interterritorial agreement (No. 26), filed October 18, 1950, which involved an agreement between railroads which are members of the various territorial rate associations, and provides for joint initiation, consideration, and establishment of interterritorial rates. Hearings were held during 1950 on the Illinois application. North Atlantic Port Railroads, Tidewater Coal Demurrage Agreement (No. 13) was approved July 21, 1950, and became effective August 21. Lake Coal Demurrage Committee Agreement (No. 14) was approved September 5, 1950. Application No. 8, Inland Water Carriers' Freight Association Agreement, was approved, with conditions, on August 2, 1950.

Signal Rules Revised. An investigation for the purpose of revising rules, standards and instructions for installation and maintenance of railroad signaling facilities was instituted by the commission on January 6, 1950. An appendix to its order, docketed as Ex Parte 171, set out proposed new rules developed during a series of conferences between the commission's Bureau of Safety, representatives of the railroads, and other interested parties, including railroad labor organizations. After some relatively minor modifications, the Revised Rules, Standards, and Instructions were made effective October 1, 1950, by order dated June 29.

Rules for Reporting Employment and Wages. The commission on October 19, 1950, promulgated a revision of its Rules Governing the Classification of Railroad Employees and Reports of Their Service and Compensation. The revision, effective January 1, 1951, includes changes which clarify instructions pertaining to the mid-month count of railroad employees, made necessary by establishment of the 40-hour week for non-operating employees. It eliminates the requirement for separate reporting of pro rata overtime, a small item to be hereafter included with straight time. Vacation time is to be reported on a uniform basis, and all service time will be reported in terms of hours.

Power Brake Order Extended. The commission on October 10 extended until December 31, 1951, the time within which freight cars used in interchange and not equipped with power brakes must be so equipped or withdrawn from interchange service.

Reports from Carrier Associations. In pursuance of authority granted to it by legislation enacted in 1949 (Public Law 197), the commission on January 12, 1950, issued an order requiring carrier associations to report their status as of August 2, 1949. The order was directed to such organizations as the Association of American Railroads, American Short Line Railroad Association, and similar organizations in the fields of highway, water carrier, and freight forwarder transport. The order called for a statement of the association's objectives and organization; copies of constitution and by-laws; names of officers, directors and members; methods of voting; list of committees and their memberships; number and functions of employees; and certain financial data.

Service Orders. The commission exercised its emergency service powers by issuing a number of orders in 1950, designed to increase car efficiency and avoid excessive car detention. During the year 31 such orders were issued, including four revised orders. During the year ended September 15, 1950, 21 service orders were vacated, or expired by date limitation.

Service Order 865, effective September 20, 1950, prescribed increased demurrage charges as of that date. Under this order, shippers' and receivers' free time remains as in existing tariffs, but charges for the first and second demurrage days were increased to $5.00; for the third and fourth days, to $10.00 per day; and to $20.00 per day thereafter. Prior to that date, demurrage charges were $3.00 per day the first four days and $6.00 per day thereafter.

Service Order 866, regarded by the commission as a companion to No. 865, requires railroads promptly to pull loaded and empty cars and to dispatch them promptly. It also appoints the chairman of the A.A.R. Car Service Division as agent of the commission authorized to issue orders with respect to location, relocation, or distribution of freight cars.

PRESIDENT SETS UP DEFENSE TRANSPORT ADMINISTRATION

Establishment of a Defense Transport Administration (D.T.A.) was announced October 4, 1950, by Interstate Commerce Commissioner James K. Knudson who, as commissioner in charge of the commission's Bureau of Service, serves as administrator of the new agency. This agency is to a considerable degree a revival of the Office of Defense Transportation, which functioned during the second World War, but which was liquidated on July 6, 1949.

The D.T.A. was created to perform priority, allocation, and other functions with respect to domestic transportation and the storage and port facilities used in connection therewith, vested in Mr. Knudson by Executive Order No. 10161, issued by the President September 9, under the Defense Production Act of 1950. Excluded from D.T.A. authority are air transport, and coastwise, intercoastal, and foreign shipping, which were placed under the secretary of commerce, who also was granted priority and allocation powers with respect to such materials as steel for freight car building. Similar powers over oil and gas pipe lines were vested in the secretary of the interior.

"Domestic transportation, storage, and port facilities," as defined in the President's executive order, "shall include locomotives, cars, motor vehicles, watercraft used on inland waterways, in harbors, and on the Great Lakes, and other vehicles, vessels, and all instrumentalities of shipment or carriage, irrespective of ownership, and all services in or in connection with the carriage of persons or property in intrastate, interstate, or foreign commerce within the United States."

The organization of the Defense Transport Administration will consist of ten sections: (1) Office of the Administrator; (2) Office of the Deputy Administrator; (3) Office of the Executive Assistant; (4) Office of the General Counsel; (5) Equipment and Materials Division; (6) Manpower Division; (7) Domestic Transport, Stor-

age, and Port Specialists; (8) Industry Consultants; (9) Information Officer; and (10) Administrative Officer.

The D.T.A. purposes to utilize the powers, facilities, and services of the Interstate Commerce Commission's Bureau of Service and such other agencies of the commission as may be available. Its work will complement that of the commission, thus avoiding duplication of effort, and confining its organization, in its initial stage at least, to a small number of personnel.

The immediate program of the new agency includes steps to deal with freight car supply and manpower needs, and in general devising plans and measures to meet the impact of the increased volume of traffic anticipated under the defense production program.

Under the terms of the executive order, Commissioner Knudson will be a claimant before the National Production Authority for steel for freight cars and other rail equipment and facilities, and would also be a claimant before the appropriate authority for fuel if rail, highway, or inland waterway carriers should experience fuel shortages. Action already has been taken by the commissioner to obtain steel for construction of new freight cars, and for repair and rebuilding of those now in service.

When the President on December 16 issued a national emergency proclamation, his Executive Order No. 10193 of the same date established an Office of Defense Mobilization with broad functions and powers. The order specifically subjects the functions of the D.T.A. to the direction and control of the director of defense mobilization. Charles E. Wilson, president of the General Electric Company, has become director.

THE SENATE INVESTIGATES TRANSPORTATION

The Subcommittee on Domestic Land and Water Transportation of the Senate Committee on Interstate and Foreign Commerce held extended hearings during 1950, pursuant to S. Res. 50, adopted by the Senate on April 11, 1949. Types of carriers covered by the investigation included steam and electric railroads, inland water carriers, motor carriers of passenger and freight, Railway Express Agency, Pullman Company, pipe lines, railroad holding companies, and freight forwarders.

In a series of hearings held on 30 different days between April 4 and July 28, 1950, statements were submitted to the subcommittee by approximately 95 individuals and organizations, representing a wide range of interests. The printed report of the proceedings, issued in November, contained 1,574 pages.

Thirteen representatives appeared before the subcommittee on behalf of the railroads, and presented testimony which showed in substance that:

(1) Railroads are self-supporting, are performing an indispensable service, and are operating with marked and increasing efficiency.

(2) Railroads are not earning enough to keep them in sound and healthy condition, which is an objective of the national transportation policy, and which is essential to prosperity in peace and to safety in war.

(3) The principal cause of basic difficulties in the transportation system is the unequal competitive situation resulting from governmental subsidies to, and promotion of, certain forms of transport, and from unequal application of regulation to the several forms of transport.

(4) Under the present system of subsidy and unequal regulation, it is not possible to realize that efficient and economical national transportation system, giving full scope to the inherent advantages of each form of transport—the goal of the national transportation policy.

(5) Such a system of subsidy increases the real costs of transportation, including both those borne by users who pay the rates and by the taxpayers who provide the subsidies.

In their presentations, railroad representatives analyzed the character, performance and competitive advantages of carriers by air, highway, and water, and discussed specific inequalities in and inadequacies of existing regulatory laws and policies. They also submitted recommendations for remedy of these inequitable conditions.

The impact of taxation upon the railroad industry, and the character and effect of railway labor legislation and its administration, were comprehensively reviewed.

Freight car supply and the effective transportation capacity of the railroads were analyzed, with a showing of the necessity for continued expansion and improvement through adequate earnings.

The railroad presentation included statements by chief executives of railroads in the East, West, and South, which summarized, supported and developed various aspects of the general situation.

Finally, statements submitted by witnesses in opposition to the railroad views were analyzed in a rebuttal and supplementary statement.

A Senate resolution, agreed to on July 27, extended the time for completion of the investigation under S. Res. 50 to February 28, 1951. The committee will presumably report its findings and recommendations early in 1951.

LEGISLATION AFFECTING THE RAILROADS

The second session of the 81st Congress opened January 3, 1950. Congress adjourned on September 23 and reconvened on November 27. All bills and resolutions upon which no final action had been taken in the first session were carried over into the second session without changes in status.

Matters of both direct and indirect concern to railroads were considered by Congress during its second session. A number of laws

were enacted which affect railroad interests, including the following principal items.

Panama Canal Bill (Public Law 841). On September 26, the President signed a bill permitting him to reorganize (as of July 1, 1951) the Panama Canal and Panama Railroad Company. The law establishes a new formula for determining the canal toll rate and eliminates the old legal limits of $1 maximum and 75 cents minimum per laden ton. The proposed reorganization will involve transfer of all of the business operations of the Panama Canal to the Panama Railroad Company, the name of the latter to be changed to Panama Canal Company. These operations include operation and maintenance of the canal itself. The name of the independent agency formerly known as the Panama Canal is to be changed to Canal Zone Government, and it is to have control over all civil government functions—such as health, sanitation and protection.

The Panama Canal Company is to be operated on a self-sustaining basis and is to be compensated or given credit for transmitting government vessels through the canal. Toll rates are to be established by the company's board of directors, subject to Presidential approval.

With signing of the new act, Presidential Proclamation No. 2775, which would have increased tolls levied for the use of the Panama Canal from 90 cents to $1 per ton for laden ships on April 1, 1951, was rescinded.

Taxes Increased

Revenue Act of 1950 (Public Law 814). This measure, approved by the President September 23, 1950, increased corporate income taxes, provided for accelerated amortization of defense facilities, and extended for one year (until December 31, 1951) sections of the Internal Revenue Code which permit exclusion from taxation of gains resulting from reduction of indebtedness in reorganization proceedings or from acquisition by a corporation, at a discount, of its own obligations. Under the act, net operating losses can be carried forward five years and carried back one year, in computation of corporate income taxes. Formerly, both carry-forward and carry-back periods had been two years.

Corporate income tax rates were raised from 38 per cent to 42 per cent for 1950 and 45 per cent for 1951. The act also increased individual income tax rates, effective October 1, 1950.

General Appropriation Act, 1951 (Public Law 759). This bill (H.R.7786), generally referred to as the "omnibus" appropriation bill, was signed by the President on September 6. The act appropriated $34 billion for activities of the federal government for the fiscal year 1951.

The amount included appropriations for the Interstate Commerce Commission totaling $11,608,200. Appropriations for the Railroad Retirement Board totaled $457,832,724. The sum of $1,359,500 was appropriated for the National Mediation Board and National Railroad Adjustment Board. Appropriations for highway construction, waterway improvements, and air transport are noted elsewhere.

The act included a general provision designed to effect a reduction of not less than $550,000,000 in the total amount appropriated for all government agencies, apportionment of cuts to be made by the Bureau of the Budget. Such cuts shall not impair national defense. The Budget Bureau announced, on October 10, reductions of $580,271,335 in nondefense appropriations, including a reduction of $200,000 in the appropriation for the Interstate Commerce Commission and $19,827,800 in the Railroad Retirement Board total.

Defense Production Act of 1950 (Public Law 774). This act, approved by the President September 8, provides for establishment of a system of priorities and allocations for materials and facilities, with authorization for requisitioning them; financial assistance for expansion of productive capacity and supply; price and wage stabilization; settlement of labor disputes; strengthened controls over credit—all for the purpose of facilitating production of goods and services necessary for national security. Powers with respect to priorities, allocations, requisitioning, and expansion of productive capacity continue until June 30, 1952, but the President's authority in regard to price and wage controls, settlement of labor disputes, and control of credit terminates on June 30, 1951.

Emergency Organizations

By Executive Order 10161, issued September 9, the President made various delegations of authority under the act. Interstate Commerce Commissioner James K. Knudson was given the powers already described in an earlier section. The order created a new and independent Economic Stabilization Agency, headed by an administrator, to maintain stabilization of the economy, including price and wage stabilization, in accordance with directives contained in the order.

Under the order, the secretary of labor is directed to utilize the functions vested in him to meet the labor needs of defense industry and essential civilian employment. The chairman of the National Security Resources Board is designated as coordinator of the functions delegated by the order. The secretary of commerce, under the authority granted him by the order, has established a National Production Authority to administer necessary priority, allocation, and inventory controls, and other provisions of the act.

The act itself authorizes the board of governors of the Federal Reserve System to exercise consumer credit controls.

Reorganization Plans Nos. 7 and 21. Congress was called upon to consider 21 plans of government reorganization submitted by the President on March 13, 1950. Two of those plans—No. 7 and No. 21—related to transportation.

Under provisions of the Reorganization Act of 1949, plans thus submitted by the President become effective automatically upon expiration of sixty calendar days, unless either the House or the Senate meantime adopts a resolution of disapproval by majority vote of its entire membership.

Reorganization Plan No. 7 provided for transfer from the Interstate Commerce Commission to its chairman of extensive executive and administration functions, including appointment and supervision of personnel and use and expenditure of funds, and for transfer from the commission to the President of the function of selecting the chairman. Resolutions disapproving the plan were introduced in both House and Senate. S. Res. 253 was passed by the Senate on May 17, 1950, by a vote of 66 to 13, which prevented Plan No. 7 from becoming effective.

Reorganization Plan No. 21 provided for abolition of the Maritime Commission and transfer of its functions to two new agencies—the Maritime Administration and the Federal Maritime Board—both within the Department of Commerce. The plan also provided for an under secretary of commerce for transportation. A resolution disapproving the plan was introduced in the Senate on April 27, and on May 19 was defeated by a vote of 14 to 59.

Acting under Reorganization Plan No. 21, President Truman appointed Major General Philip B. Fleming (re-

tired) to be under secretary of commerce for transportation. After Senate confirmation, General Fleming took his oath of office on July 24.

Basing-Point Bill (S.1008). This measure was designed to clarify the legal status of freight absorption and basing-point pricing. The bill was passed and sent to the President, who vetoed it on June 16, 1950. The Senate Committee on Interstate and Foreign Commerce set up a five-man "watch-dog" subcommittee, to maintain a check on activities of the Federal Trade Commission in connection with cases involving delivered pricing and freight absorption.

The subcommittee issued a report on December 13, 1950 (Senate Report No. 2627) in which it called upon the next Congress to clarify the right of sellers to competitive freight absorption. The subcommittee said that much of the confusion "is directly attributable to the Federal Trade Commission."

Other Congressional Action

Antistrike Bill (S.3463). A bill to amend the Railway Labor Act so as to make unlawful any strike or lockout in the railroad industry was introduced by Senator Donnell of Missouri on April 21, 1950. Hearings on S.3463 were held before a subcommittee of the Senate Labor Committee. On August 25, 1950, the committee reported adversely to the Senate, and the bill died.

Postal Rates (S.1103 and H.R.2945). These two measures dealt wtih proposed increases in parcel post rates and reduction in the size and weight limits of parcel post packages. Early in the second session, the Senate recommitted S.1103 to its Committee on Post Office and Civil Service. H.R.2945 was passed by the House on February 9, 1950. After passage by the House, H.R.2945 was referred to the Senate Committee on Post Office and Civil Service, which held hearings, but took no further action.

Proposed Amendment of Exemption Provision of Motor Carrier Act (H.R.7547). This measure, introduced on March 3, 1950, would amend Section 203(b)(6) of Part II of the Interstate Commerce Act, which provides exemption from economic regulation under that act of motor vehicles used in transporting ordinary livestock, fish, and agricultural commodities, if such motor vehicles are not used in carrying other property, or passengers, for compensation. Efforts by the I.C.C. to restrict the application of this exemption to specified commodities in the form customarily shipped by the original producer, and to motor vehicles not used at any time in the transportation of nonexempt commodities, were negated by certain court decisions. The result has been development of a large and growing class of for-hire truckers which is free of regulation applicable to for-hire truckers in general.

H.R.7547 would limit exemption, so far as concerns the commodities covered by it, to the scope originally given it by the commission. Hearings on the measure were held on July 24, 1950, before the Transportation Subcommittee of the House Committee on Interstate and Foreign Commerce.

Recapitalization of Inland Waterways Corporation (S.211 and H.R.4978). These two similar bills would increase the capitalization of the Inland Waterways Corporation. S.211, providing for an additional authorization of capital stock of $7 million, was favorably reported by the Senate Committee on Interstate and Foreign Commerce on October 15, 1949, but the Senate took no action. The Transportation Subcommittee of the House Committee on Interstate and Foreign Commerce, which had previously held hearings on H.R.4978, heard additional testimony by the secretary of commerce on June 27, 1950. The subcommittee took no action.

St. Lawrence Waterway Project (S.J.Res. 99 and H.J.Res. 271). These resolutions were introduced in the first session. Similar in character, they seek approval of the United States-Canada agreement for development of the St. Lawrence waterway and power project. Hearings on H.J.Res.271 were held before the House Committee on Public Works in April and May 1950. The committee then voted to postpone further hearings.

Communication-Rules Bills (S.238 and H.R.378). These identical bills would so amend Section 25 of the Interstate Commerce Act as to authorize the commission to require carriers to install and maintain telegraph, telephone, radio, inductive or other wayside or train communication systems intended to promote safety of railroad operations, and "to establish and maintain rules, regulations and practices with respect to operation of trains intended to promote safety of railroad operations." The Senate Committee on Interstate and Foreign Commerce made no report on S.238. The corresponding House committee reported favorably on H.R.378 on January 31, 1950, with certain amendments.

Union Shop and Check-Off Bills (H.R.7789 and S.3295). These identical bills were introduced in March 1950. They would amend the Railway Labor Act so as to authorize agreements providing for a union shop and a check-off of union dues in the railroad industry. Following hearings on the bills by House and Senate committees, H.R.7789 was reported favorably to the House on August 7, and S.3295 was reported favorably to the Senate on August 9. The Senate approved the bill on December 11, 1950, and the House on January 1, 1951.

Excess Profits Tax Act of 1950 (H.R.9827). This bill passed the House on December 5, 1950, and the Senate (with amendments) on December 20, 1950. The conference report, approved by both houses, went to the President on January 1, 1951. The bill imposes an additional 2 per cent corporate income tax, together with an excess profits tax. For regulated public utilities which derive at least 80 per cent of their gross income from regulated charges, an alternative is provided applying the tax only to net income in excess of 6 per cent on invested capital.

ANTITRUST SUITS AND OTHER COURT PROCEEDINGS

Georgia Antitrust Case Dismissed. The United States Supreme Court announced dismissal of the Georgia antitrust case on November 27, 1950. This action resulted from a motion filed by the defendant railroads, concurred in by the State of Georgia, which asked that the case be dismissed.

This case had been pending in the Supreme Court since June 1944. The state of Georgia

alleged that certain northern and southern railroads named defendants were engaged in a freight rate conspiracy against the South, and against Georgia in particular. A special master was appointed in 1945 to hold hearings and report to the court. The special master filed his report on June 12, 1950, recommending that the complaint be dismissed. His findings, among other things, concluded that the state of Georgia had failed to show special damages or to furnish any proof of unlawful conspiracy to coerce or discriminate, and that the evidence by the state in regard to injury to its economy was "too shadowy and hypothetical to warrant such a presumption."

Government's Antitrust Suit. Little progress was made during the year toward final action in this suit, which was instituted in July 1944 by the Department of Justice against the Western Association of Railway Executives, Association of American Railroads, and certain railroads and individuals. On October 23, 1950, the Department of Justice notified the United States District Court at Lincoln, Neb., that it proposed a court attack on orders of the I.C.C. approving Applications Nos. 2 and 7, filed under provisions of Section 5a of the Interstate Commerce Act (Reed-Bulwinkle Act). Judge John W. Delehant thereupon entered an order, providing that no further proceedings be taken in the antitrust case until 45 days after final disposition of the contemplated court action.

In the Supreme Court

I.C.C. Rail-Barge Joint Rate Order. An investigation was instituted by the Interstate Commerce Commission in October 1934 of the lawfulness of through routes and joint rates of railroads and common carriers by water on the Mississippi river, Warrior river, and their tributaries. This was Docket No. 26712, Rail and Barge Joint Rates. After extensive hearings, the commission on July 7, 1948, found such through routes and joint rates necessary and desirable in the public interest, and prescribed differentials between all-rail rates and joint barge-and-rail rates. The commission on June 13, 1949, ordered affected railroads and water carriers to establish joint rail-water rates reflecting the prescribed differentials.

On September 20, 1949, 27 railroads, in behalf of themselves and others similarly situated, filed suit in the Federal District Court of Chicago, to enjoin and set aside the June 13 order of the commission. The railroads contended that the order compelled them to give up to their competitors certain traffic which would normally move all-rail in the absence of the so-called lower differential rates prescribed by the commission. The matter was heard by a three-judge federal court which, on January 12, 1950, sustained the validity of the commission's order. The case was appealed to the United States Supreme Court on March 7, which heard arguments on November 8 and 9, but had not delivered its opinion at the end of the year. In the meantime, the effective date of the commission's order has been postponed from time to time, the latest postponement being to March 1, 1951.

Railway Labor Act Cases. In two cases handed down by the United States Supreme Court on April 10, 1950, the court ruled that disputes between railroads and their employees, involving interpretation of working agreements, must be settled by the National Railroad Adjustment Board and not by state courts. The court construed Section 3 of the Railway Labor Act as vesting exclusive jurisdiction in the adjustment board over disputes involving interpretation of collective-bargaining agreements, where the interpretation concerns questions of future relations between a railroad and its employees. The cases before the court were Order of Railway Telegraphers v. Delaware, Lackawanna & Western, and Order of Railway Conductors v. Southern Railway.

Period of Employee Protection Extended. In an opinion handed down March 27, 1950, the United States Supreme Court in a 4-to-3 decision held that the I.C.C. has power under Section 5 (2) (f) of the Interstate Commerce Act to extend the period of protection of the interest of railroad employees in a consolidation. The case under consideration was Railway Labor Executives Association v. U. S., I.C.C., City of New Orleans, et al., and grew out of the plan to construct a new union passenger terminal at New Orleans. The commisssion's order approving the project contained provisions for compensatory protection of employees affected by the consolidation, but limited such protection to four years from the effective date of the order. The labor executives brought suit to set aside that part of the order, contending that inasmuch as the commission had allowed the builders of the terminal a longer time to complete the project, many affected employees might receive no protection because their jobs would not be terminated until after expiration of the four-year period. A three-judge court dismissed the proceedings. Upon appeal, the Supreme Court held that the commission may extend protection beyond the four-year period, and remanded the case with instructions that it be returned to the commission for further proceedings consistent with the court's opinion.

OPERATIONS OF THE RETIREMENT BOARD

Railroad Retirement. Railroad retirement operations during 1950 afford a reasonably exact comparison with the year 1949, benefit provisions and tax rates being the same in both years.

The number of beneficiaries on the retirement rolls of the Railroad Retirement Board, as well as the benefit disbursements to such beneficiaries, rose to a new high level in 1950. Beneficiaries numbered 394,346 as of October 31, 1950, compared with 364,950 on the same date in 1949, an increase of 29,396. The 1950 total comprised 246,455 retirement annuitants, 7,840 pensions (persons transferred from the voluntary rolls of the carriers in 1937) and 140,051 recipients of survivor annuities.

The increase of 29,396 beneficiaries in 1950 was accounted for by a net increase of 16,661 in the number of retirement annuities, a net increase of 14,224 in the number of survivor annuities and a decrease of 1,489 in the number of pensions by reason of deaths in that group.

Total retirement benefit payments in the month of October 1950 aggregated $26,294,711, compared with

$24,818,633 in October 1949. Thus the annual level of disbursements rose during 1950 from $297,823,596 to $315,536,532, an increase of 5.9 per cent.

Retirement tax accruals in 1950 increased slightly over 1949, reflecting the rise in employment during the latter months of 1950. For the ten months ended October 31, 1950, railroad accruals amounted to $199,943,000 compared with $195,970,000 for the corresponding period of 1949. Similar amounts were paid by rail employees. The payroll tax rate for railroad retirement of 6 per cent each on railroads and their employees (or 12 per cent in all) which became effective January 1, 1949, remained in effect during 1950. The rate will rise to 6¼ per cent on each (12.5 per cent in all) on January 1, 1952.

Railroad retirement payroll taxes are collected by the Bureau of Internal Revenue and deposited in the general fund of the Treasury. Congressional appropriations of the estimated amount of taxes to be collected each year are made to the Railroad Retirement Board. Differences are adjusted in later appropriations. Congress also appropriates amounts on account of creditable military service performed by railroad employees. Separate appropriations are made for administrative expenses.

The following tabulation summarizes the financial operations of the railroad retirement system from its inauguration in 1937 to October 31, 1950. Administrative appropriations and expenses are not included.

Receipts:		
From appropriations	$4,395,516,419	
Interest on investments	238,959,503	
Total		$4,634,475,922
Disbursements:		
Benefit payments	$2,206,119,417	
Transferred to administrative account	6,796,000	
Total		$2,212,915,417
Balance		$2,421,560,505

Administrative expenses for the entire period of operation to October 31, 1950, amounted to $47,723,127.

The Railroad Retirement Board early in 1950 issued a report on the fourth valuation of the liabilities and assets of the railroad retirement system as of December 31, 1947. This valuation is the fourth in a series of such valuations, which are prepared at three-year intervals, and are reviewed by an independent Actuarial Advisory Committee, in accordance with provisions of the Railroad Retirement Act. The valuations are made to determine the combined tax rate on railroads and their employees which, together with interest on investments, will meet all future obligations of the system.

The valuation found that a total level tax rate on employers and employees of 12.72 per cent on an average annual payroll of $4.6 billion would be required to provide sufficient funds to pay all future retirement benefits. The present tax schedule, taken in conjunction with an assumed payroll of $4.6 billion, is equivalent to a level tax rate of 12.42 per cent, indicating a deficiency of 0.3 per cent (12.72 less 12.42) in the present rate.

Railroad Unemployment Compensation. Railroad unemployment compensation benefits for 1950 declined from the record high levels of 1949. Benefit disbursements for the ten months ended October 31, 1950, amounted to $55,846,164, compared with $74,434,938 for the corresponding period of 1949, a reduction of 25 per cent. Disbursements were about twice as great during the first quarter of 1950 as in the same period of 1949, but declined each month thereafter, and were less than half as great in the second and third quarters as in the corresponding quarters of 1949.

	1949	1950	Per cent Change
Jan.-Mar.	$16,626,685	$33,982,896	I 104.4
Apr.-Oct.	57,808,253	21,863,268	D 62.2
Jan.-Oct.	74,434,938	55,846,164	D 25.0

Sickness and Maternity. Benefit disbursements for sickness, injury and maternity declined slightly in 1950. Payments on account of sickness and injury (excluding maternity benefits) amounted to $21,264,599 for the ten months ended October 31, 1950, compared with $22,618,829 for the corresponding period of 1949. Maternity benefits amounted to $1,735,561 and $1,784,178 for the same respective periods.

Unemployment tax accruals by Class I railways for the ten months ended October 31, 1950, amounted to $16,657,000. For the corresponding period of 1949, the amount was $16,326,000. Since the current tax rate (0.5 per cent) prevailed during both 1949 and 1950, the slight increase for 1950 reflected a correspondingly moderate increase in employment and payrolls.

Under the sliding scale of payroll taxes provided by the Railroad Unemployment Insurance Act, the tax rate for ensuing years will remain at 0.5 per cent so long as the amount in the railroad unemployment insurance reserve amounts to $450,000,000 or more on September 30 of the preceding calendar year. The officially proclaimed balance as of September 30, 1950, was $779,067,959, thus assuring a continuation of the 0.5 per cent rate through 1951. This compares with a balance of $871,299,952 as of September 30, 1949.

The financial results of operation of the railroad unemployment insurance system for the entire period of operation from July 1, 1939, to October 31, 1950, are shown in the following summary:

Receipts:		
Taxes (incl. transfers from states)	$1,117,126,895	
Interest on unemployment reserve fund	123,356,121	
Total receipts		$1,240,483,016
Disbursements:		
Benefit disbursements (net):		
Unemployment	$313,679,712	
Sickness (excl. maternity)	88,823,438	
Sickness (maternity)	6,491,283	
Administrative expenses	49,438,921	
Total disbursements		$458,433,354
Balance:		
To credit of unemployment reserve	$775,526,557	
To credit of administration fund	6,523,105	
Total balance, October 31, 1950		$782,049,662

OTHER DEVELOPMENTS IN THE NATIONAL EMERGENCY

Commerce Department Centralizes Transport Activities. Secretary of Commerce Charles Sawyer on November 29, 1950, issued an order centralizing the transportation activities of the Department of Commerce. It delegated additional responsibilities to the under secretary of commerce for transportation, established a Transportation Council within the department, and provided for a deputy under secretary for transportation, who will serve as chief of a newly created Office of Transportation.

Additional duties of the under secretary include com-

pilation and analysis of traffic requirements on existing transportation facilities growing out of industrial mobilization; determination of adequacy of such facilities to handle the increased load; development of proposals designed to secure maximum use of transport facilities; and stimulation of provision of additional facilities.

The Transportation Council will include the under secretary of transportation as chairman, the chairman of the Civil Aeronautics Board, the maritime administrator, commissioner of public roads, civil aeronautics administrator, and the chairman of the Advisory Board of the Inland Waterways Corporation. The council will advise the secretary of commerce in regard to departmental policies in the field of transportation.

Amortization of Emergency Facilities. Section 216 of the Revenue Act of 1950 added Section 124A to the Internal Revenue Code. Section 124A provides for amortization, based on a period of sixty months, of the cost of any emergency facility, as defined in the section, which has been certified as necessary in the interest of national defense during the emergency period. "Emergency period" is defined to mean the period beginning January 1, 1950, and ending on the date on which the President proclaims that utilization of a substantial portion of the emergency facilities with respect to which certifications have been made is no longer required in the interest of national defense.

Processing of Applications

In an Executive Order, dated January 3, 1951, the President designated the administrator of the Defense Production Administration, William H. Harrison, as the certifying authority under the accelerated amortization provisions of Section 124A. Applications for authority to amortize emergency facilities over a five-year period, for tax purposes, will be filed with the N.P.A. Applications will be assigned to appropriate agencies of the government (in accordance with responsibilities delegated to them under the Defense Production Act of 1950), where they will be examined. Railroad applications will be processed through D.T.A. Administrator James K. Knudson. Following examination, the respective agencies will return applications to the N.P.A., together with their recommendations. Final decision as to certification is vested in the administrator.

Receiverships and Trusteeships. At the end of 1950, a total of 43 railroad companies, operating 12,272 miles of line, were in the hands of receivers and trustees. This was one less than the number of companies at the end of 1949, when 12,679 miles were similarly situated. Of the total number as of December 31, 1950, one Class I and 4 smaller lines were in the hands of receivers, while 11 Class I and 27 smaller lines were in the hands of trustees. The only change during the year was emergence from court jurisdiction of the Rutland Railroad Company, a Class I railway corporation, which was discharged from trusteeship. Ownership and properties of the old company were transferred to the new Rutland Railway Corporation on November 1.

Government Loans to Railroads. As of November 30, 1950, the balance of government loans to railroads by the Reconstruction Finance Corporation amounted to $128,563,748. Railroad loans outstanding a year earlier, on November 30, 1949, totaled $132,336,254. Thus there was a net decrease of $3,772,506 during the intervening 12-month period.

A.A.R. Research Laboratory Opened. Dedication of the central research laboratory of the Association of American Railroads, on the campus of the Illinois Institute of Technology in Chicago, took place on May 26, 1950. This new million-dollar laboratory will serve as the nerve center for research in the railroad industry. The 51 ft. by 218 ft. structure will house the research staffs of the Engineering and Mechanical Divisions of the A.A.R., and a new container testing laboratory for the Operating-Transportation Division. Tracks are provided for impact tests of cars and lading and storage.

British Nationalized Transport. The transportation industry of Great Britain was nationalized on January 1, 1948. On that date the newly created British Transport Commission, on behalf of the government, took over all railways in Britain, local passenger transport in London, canals and inland waterways, certain of the highway freight and passenger transport operations, and the hotels, docks, and shipping formerly owned and operated by the railways. The original holdings have been greatly expanded since that date by further acquisition of both freight and passenger services by highway. The principal segment of intercity highway transport not acquired by the government is the operation of "C" licensed trucks which may be used to carry the owners' own goods. Growth of privately owned (C license) trucks since nationalization has caused the British Transport Commission great concern.

The second annual report of the British Transport Commission, covering operations for the year 1949, was published in September 1950. The consolidated income account, covering all nationalized transport operations for 1949, showed a deficit of £20,761,000, compared with £4,733,000 for 1948. The accumulated deficit for the first two years of nationalization was thus £25.5 million.

It is difficult to isolate the financial results of British railway operations, because the transport commission does not allocate interest and other charges to the various modes of transport. Railway gross receipts in 1949, however, amounted to £325 million, a decrease of 3.2 per cent under 1948, and rail net revenue (after expenses, but before interest and other charges) was £12.7 million, a decrease of 52 per cent under 1948.

Worsening conditions caused the transport commission to request increases in both rail freight rates and London passenger fares. The requests were approved by the minister of transport, raising rail freight rates on May 15, 1950, by 16⅔ per cent, or to 181 per cent of prewar rates, and London passenger fares on October 1 by amounts sufficient to increase operating revenues by £2.7 million per year.

Despite increased revenues from highway operations recently acquired and from increased rates and fares for part of the year, the commission anticipated "a substantial deficit" for 1950.

European Group Studies American Railroads. A group of 85 top railroad officers and equipment manufacturers, representing 12 European countries included in the Marshall Plan, participated during 1950 in six weeks of intensive study of American railroad methods and equipment. The delegation visited the United States under the auspices of the Economic Cooperation Administration's Technical Assistance Program.

The study program of the railroad group, arranged by the A.A.R., began on September 11, when the delegates assembled in Chicago for a preliminary orientation course. Specialized subgroups were formed to study maintenance and design of locomotives and passenger and freight cars; operations of road, yards, terminals, stations, and motor transport; communications and signals; engineering, involving maintenance of way and structures; statistics and accounting; traffic; and electrification.

NO REAL IMPROVEMENT IN THE COMPETITIVE SITUATION

The competitive situation in 1950 was characterized by continuing inroads on railroad traffic and earnings by other forms of transport; by expenditure or appropriation of ever-increasing amounts of public funds to provide facilities for carriers with which the railroads compete; and by stepped-up efforts on the part of the railroads to bring about those changes in governmental policies which are a prerequisite to realization of the "fair and impartial regulation of all modes of transportation" called for by the national transportation policy.

Traffic. Accurate portrayal of traffic trends in 1950 must necessarily await receipt of data showing results for the entire year. It is only possible to indicate the trends in a general way.

Total freight traffic, measured in ton-miles for all forms of transport, is expected to be about 12 per cent above the corresponding level of 1949. It is estimated that railroads will show an increase of 11½ per cent; motor trucks, in the neighborhood of 25 per cent; oil pipe lines, about 10 per cent; inland rivers and canals, 5 to 6 per cent; and Great Lakes about 8 per cent.

In the field of passenger operations, all modes of transport except air carriers are expected to show decreases compared with 1949: railroads about 9 per cent; buses, 16 per cent; inland waterways, 7 per cent. Air carriers, on the other hand, will show an increase of perhaps 15 per cent. For passenger transportation as a whole, the indicated decline is about 9 per cent.

Truck Leasing Rules. On June 26, 1950, the I.C.C. issued a report and order in Ex Parte MC-43, prescribing rules and regulations governing leasing and interchange of motor-vehicle equipment by common and contract motor carriers. In general, the rules cover the following subjects: (1) Definitions; (2) regulations under which authorized carriers may add to their equipment by acquiring vehicles to which they do not hold title; (3) interchange of equipment among common-carrier truckers; (4) rental of equipment to private carriers and shippers; and (5) procedures for filing applications for modification of, or exemption from, rules. The matter was reopened for oral argument, heard on October 30. Further action is pending.

Revision of Motor Carrier Safety Rules Proposed. The commission made public on November 27, 1950, a proposed revision of motor bus and truck safety regulations. The new rules provide standards for eyesight and hearing of drivers, and for the first time require annual physical examinations. Other regulations cover vehicle inspection, installation of safety devices, and the like. This represents the first general overhauling of such rules in eleven years.

Impact of Long-Haul Trucking on Railroads. The commission on November 14, 1950, denied the application of the Pacific Intermountain Express Company for authority to acquire control of the Keeshin Motor Express Company, and in effect to create a transcontinental trucking system. In its report, the commission expressed concern over the impact of long-haul trucking on the railroads' ability to maintain essential services and facilities, and pointed out that "in the administration of the national transportation policy the inherent advantages of rail transportation on volume movements of transcontinental traffic must be preserved."

In April 1950, 90 railroads petitioned the commission to institute a general investigation of long-haul highway transportation, to determine its economic and other effects.

The petition listed more than 40 applications pending before the commission for authority to establish long-haul truck routes, some of them extending from the Atlantic to the Pacific and from the Gulf of Mexico to the Pacific Coast. Sixteen organizations interested in the grain trade had previously filed a similar petition. It has been indicated that funds for such an investigation will be requested.

Overloading of Trucks Condemned. Testifying in June before the Senate Subcommittee on Domestic Land and Water Transportation, in hearings pursuant to S.Res.50, Thomas H. MacDonald, commissioner of the Bureau of Public Roads, stated that approximately one-fourth of all ton-miles on main rural roads during 1949 were produced by trucks exceeding state legal load limits, and that excessive axle loading is causing great damage to the nation's highways.

Major General Philip B. Fleming, under secretary of commerce for transportation, told a meeting of the American Association of State Highway Officials on December 4 that overloading of trucks by a very small minority of commercial operators threatens the efficiency of our highway system.

Road Builders Want $41 Billion

Expenditures for Highway Construction. The Federal Aid Highway Bill (H.R.7941), authorizing a federal outlay of $1,188,000,000 for roads in the fiscal years 1952 and 1953, was approved by the President September 7, 1950. The amounts authorized will not become available until provided for in appropriation acts for the fiscal years involved.

The Omnibus Appropriation Act for the fiscal year 1951, approved by the President September 6, carried an appropriation of $412,100,000 for the Bureau of Public Roads, to be used as follows: Federal-aid postwar highway program, $385,000,000; forest roads, $22,500,000; grade crossing and other protection work, $4,600,000.

Highway Needs Estimated. A report entitled "Highways and the Nation's Economy" was issued on January 4, 1950, by the House and Senate Joint Committee on the Economic Report. The report estimated the total cost of "correcting the present deficiencies" on the highways, roads and streets of the United States at more than $41 billion. The report also estimated that annual road maintenance expenditures would be increased by more than $1 billion. The estimates were based on reports received from governors and highway departments of a large number of states.

Authorizations and Appropriations for Waterway Projects. An Omnibus Rivers and Harbors Bill (H.R.5472) was signed by the President May 17, 1950. The measure carries no appropriations, but makes additional projects eligible for appropriations by Congress at a later date. The bill authorizes $203,723,000 for river and harbor projects, and $1,279,870,000 for flood control, a total of nearly $1½ billion. Authorizations include 94 navigation projects and 64 flood-control projects.

The General Appropriation Act, 1951 (omnibus appropriation bill), approved September 6, carried a fiscal-year 1951 appropriation of $199,711,500 for the rivers and harbors work of the Army Engineers. Appropriations for flood control work totaled $455,937,000. A supplemental appropriation act, approved September 27, 1950, carried additional appropriations of $4,000,000 for rivers and harbors work, and $8,900,000 for flood control.

The Budget Bureau later made a reduction of $50,000,000 in funds provided for civil activities of the Army Engineers. Commenting on this cut, the Budget Bureau said that no going contracts are to be stopped, but that no new starts will be made in fiscal 1951 except those certified by the President as necessary to national defense. Following the Budget Bureau announcement, the Army Engineers made public a program for fiscal 1951 which calls for expenditures totaling $618,564,650.

Operations of Inland Waterways Corporation. The report of the corporation for the fiscal year 1950 shows a net deficit of $733,660, covering operations of both the Mississippi river system and the corporation's rail division (formerly the Warrior River Terminal Company). The corresponding deficit for fiscal 1949 was $1,000,065.

Total freight transported in the corporation's own barges in fiscal 1950 aggregated 2,641,394 tons (single count), compared with 2,705,314 tons in fiscal 1949, a decrease of 2.4 per cent. Of the 1950 total, 71 per cent was bulk freight, while 29 per cent was merchandise.

Government Funds for Air Transport. Nearly a quarter billion dollars in appropriations and authorizations was provided for air transport by the federal government for the fiscal year 1951. The General Appropriation Act carried appropriations of $98,500,000 for the Civil Aeronautics Administration for "salaries and expenses," a large portion of which is devoted to operation and maintenance of existing airway facilities; $37,000,000 for the federal-aid airport program; $27,500,000 for establishment of air-navigation facilities; $6,000,000 for air navigation development; and $6,415,000 for various C.A.A. activities such as technical development, operation and maintenance of the Washington National Airport, and the like. In addition, the C.A.A. was authorized to incur obligations totaling $54,950,000 for establishment of air-navigation facilities, for the federal-aid airport program, and for air navigation development. The Civil Aeronautics Board received $3,500,000 to cover its activities. The aggregate of appropriations and authorizations for both agencies totaled $233,865,000.

Expenditures for Airports

Federal-Aid Airport Program for Fiscal 1951. Civil Aeronautics Administrator Donald W. Nyrop announced on November 7, 1950, that 186 airport construction or development projects will be undertaken under the federal-aid program during the fiscal year 1951. These include 73 projects for construction or improvement of Class I, II, and III airports, and 113 projects involving Class IV or larger airports. Expenditures for the 186 projects are estimated at $51,024,000, of which $24,839,000 will be federal funds, and $26,185,000 will be matching funds provided by state or local sponsors.

New Airport for D. C. A bill (S.456) authorizing construction of a second public airport to be located in or near the District of Columbia was approved by the President on September 7, 1950. The measure became Public Law 762. The Supplemental Appropriation Act carried an appropriation of $1,000,000 with which to purchase a suitable site. The Budget Bureau had recommended $2,150,000.

Air Coach Services Continued. On September 27, 1950, the Civil Aeronautics Board authorized continuance until March 31, 1951, of coach services on nine major air lines, then operating pursuant to tariffs expiring on September 30. As a condition to the six-month extension, the board ordered fares to be increased from 4 cents to 4½ cents per passenger-mile by November 15. The board also restricted such services, as in the past, to operations at off-peak hours between major traffic centers with limited services to passengers.

RAILWAY EQUIPMENT ORDERS MAKE RECORDS

Table 11 shows railroad ownership of equipment, at the end of each year from 1945 to 1949 and as of December 1, 1950. The number of new units on order at the end of each year or period are also shown, together with annual installations. The statistics of freight cars on order are those of the Car Service Division, which differ somewhat from those of the American Railway Car Institute.

Locomotives. During the first eleven months of 1950, steam locomotive ownership continued to decline, whereas ownership of diesel-electric and electric locomotives maintained the recent upward trend. Steam locomotives owned on December 1, 1950, were less by 3,394 than the number owned at the end of 1949. Ownership of electric and diesel-electric locomotives increased by 2,107. Since the end of 1945, ownership of steam locomotives has shown a net decrease of 13,268, but there has been a net increase of 6,546 in electric and diesel-electric locomotives. These figures are expressed in numbers, and

Table 11—Equipment Ownership and Installations

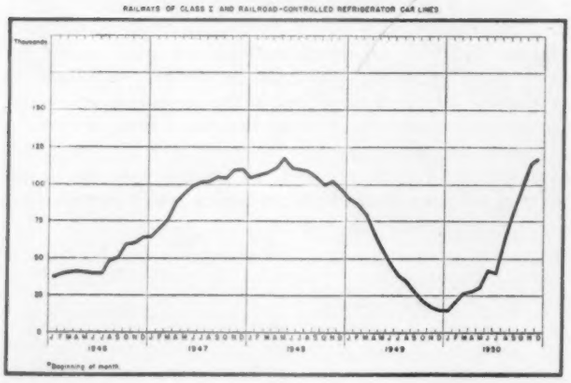
	Ownership at end of year	Installed during year	On order at end of year
Steam locomotives:			
1950 (Dec. 1)	25,415	*11	17
1949	28,809	57	13
1948	32,613	86	72
1947	34,800	72	30
1946	37,255	83	64
1945	38,683	109	92
Diesel & electric locomotives:			
1950 (Dec. 1)	10,276	*2,121	1,640
1949	8,169	1,808	885
1948	6,368	1,401	1,561
1947	4,964	771	1,196
1946	4,222	480	540
1945	3,730	534	379
Freight-carrying cars:			
1950 (Dec. 1)	1,717,077	*36,793	115,847
1949	1,749,736	84,669	14,368
1948	1,754,840	102,737	89,437
1947	1,731,231	63,312	105,112
1946	1,739,930	40,377	63,829
1945	1,759,662	38,987	37,160

*Eleven months

FREIGHT CARS ON ORDER

1946-1950, BY MONTHS*

RAILWAYS OF CLASS I AND RAILROAD-CONTROLLED REFRIGERATOR CAR LINES



*Beginning of month.

do not take into account either the tractive power or the relative efficiency of the different types of motive power.

Locomotive supply continued to be adequate, and stored serviceable units afforded a margin of safety throughout the year. The proportion of unserviceable locomotives, both steam and diesel, rose from 9.0 per cent on January 1 to a high of 10.0 per cent on March 1. Not since September 1, 1943, when the unserviceable ratio was 10.3 per cent, had it been as high as ten per cent. From March 1 the trend was downward and the ratio stood at 9.1 per cent on December 1.

Locomotives on order as of December 1, 1950, totaled 1,657, of which 1,634 were diesel-electric. More locomotives were installed during 1950 than in any year of the preceding 27-year period.

Installations and Backlogs

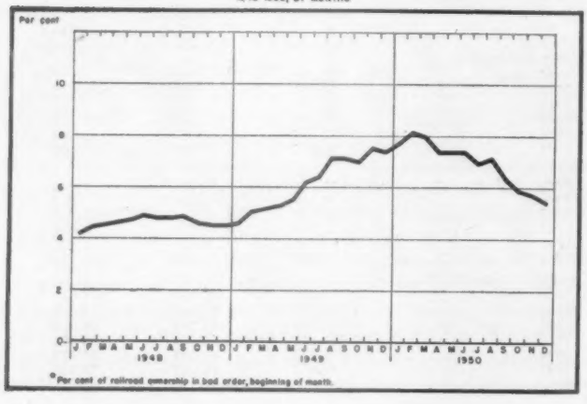
Passenger Equipment. Total ownership of passenger-train cars decreased from 38,608 at the close of 1949 to 38,415 at the end of September, 1950. New passenger-train equipment of all types installed by the railroads during the first nine months of 1950 totaled 824 units, of which 327 were sleepers, 237 were coach and coach combinations, 119 were baggage, express and postal cars, and 52 were dining cars. The remaining 89 were parlor, rail motor cars, etc.

Passenger train cars on order as of October 1, 1950, numbered 332.

FREIGHT CARS AWAITING REPAIRS*

RAILWAYS OF CLASS I

1948-1950, BY MONTHS



*Per cent of railroad ownership in bad order, beginning of month.

Freight cars. Installation of new freight cars during the first eleven months of 1950 totaled 36,793. Total installations for the year will approximate 42,000, compared with 84,669 for the year 1949.

Freight car ownership of the railroads on December 1, 1950, numbered 1,717,077 cars, a decrease of 32,659 cars under the ownership at the end of 1949. The trend to December 1 was downward, month by month, as retirements of older and obsolete cars exceeded new installations.

This trend will undoubtedly be reversed in the near future, as the expanded freight car program gets under way. In anticipation of the rapidly expanding national defense program, which foreshadows heavier rail traffic volumes for the next few years, the railroads began to step up their freight car orders as early as December, 1949. This was followed in July by establishment of the car construction program described in an earlier section. The program has already been strikingly translated into increased car orders.

A chart (left, above) shows the number of freight cars on order at the beginning of each month, years 1946 through 1950. The number of orders in effect on December 1, 1950, was greater than at any time (except on May 1, 1948) since the close of the war.

Continuing Car Shortages

Freight car shortages continued throughout the year, and of necessity were greater than in 1949. The demand for box cars was particularly heavy in the fall months, and the bulk of the shortages occurred in that group. Requirements for open top cars continued heavy, as industrial production was stepped up to meet the needs of the remobilization program. The maximum daily shortage in 1950, in the week of August 26, was 39,477 cars, a figure which was reduced to 14,433 cars during the week of December 16. The maximum for 1949 was 12,452 cars, for the week of October 8.

The railroad program also included intensified repair of bad-order equipment, especially freight cars, so as to bring the bad-order percentage down to or below five per cent of cars owned. In line with this program, the proportion of unserviceable freight cars was reduced from 7.7 per cent on January 1, 1950, to 5.4 per cent on December 1.

The trend in percentage of bad-order cars, awaiting repairs, for each month of the three years 1948 through 1950, is shown in the chart at the left, below. The almost consistent decline in that percentage during 1950 is clearly indicated by the downward curve for the year.

Insurance Company Plans for Financing Rail Equipment. The Equitable Life Assurance Society announced in March 1950 development of a plan to purchase new freight cars and lease them to railroads. Under the plan, railroads obtain new equipment without down payment. The arrangement involves a purchase agreement between Equitable and the car manufacturer, and a lease by Equitable to the railroad of the equipment thus purchased.

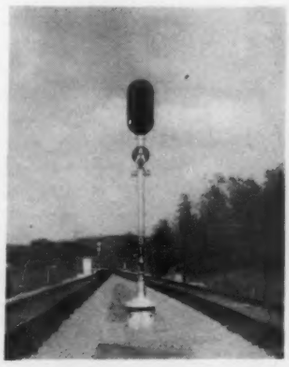
The agreement between the insurance company and the railroad provides for leasing cars to the carrier for an initial term of 15 years, with option to return cars to Equitable at the end of such term or to continue to lease any or all of the cars for an additional term up to 10 years at a nominal rental rate. The rental rate for the first 15 years is on a sliding scale, being highest for the first three years, and decreasing at three-year intervals thereafter. The lessor railroad maintains the equipment, and pays the taxes on it.

The Prudential Insurance Company of America an-

nounced on July 20 that it would finance construction and leasing to railroads of the new GAEX-DF (or so-called "damage-free") box car.

Up to the end of 1950, some 20,000 freight cars and a number of diesel locomotives had been ordered under the terms of the leasing arrangements just outlined.

NEW PEAKS IN EFFICIENCY AND ECONOMY



The next four tables compare significant performance averages for the first eight months of 1950 with annual averages for the years 1942 to 1949. Comparable figures for 1929 are also shown.

Traffic volume influences some of these averages. All things equal, performance will usually show to better advantage in periods of high traffic volume. These averages maintained high levels in 1950, although traffic volumes were still depressed by comparison with the period 1942-1948.

Ton-miles per freight train-hour, combining both load and speed factors, is a highly significant freight performance average. It shows the unit output per hour of freight train operation. The average is computed on two bases: (1) gross ton-miles of cars and contents per freight train-hour, and (2) net ton-miles (lading only) per freight train-hour. Both averages are shown in Table 12. Those for the first eight months of 1950 indicate that new records for each of the two averages were set for the year.

Performance Data

Other significant operating factors are shown in Table 13, namely, daily mileage averages for locomotives and freight cars. Long hauls necessitated by war traffic from 1942 to 1945 resulted in increased daily mileage for both locomotives and cars. Some of these favorable factors disappeared in the postwar period, and these averages have tended to recede. Current performance is, however, well above that of prewar days.

Active freight locomotives in the first eight months of 1950 averaged 117.5 miles per day, 4.4 per cent above the year 1949 and only 5.6 per cent below the peak year, 1943. Active passenger locomotives showed an increase of 2.5 per cent in daily mileage, averaging 234.3 miles per day—a new record. Serviceable freight cars averaged 45.3 miles per day during the first eight months of 1950, an increase of 5.6 per cent over 1949, but 12.7 per cent below the record established in 1944.

These averages were all substantially above the corresponding averages for 1929. Freight locomotive performance in 1950 was 28.8 per cent above that for 1929, passenger locomotive performance was 42.4 per cent greater, while freight car performance was greater by 31.7 per cent.

Train speeds, the only performance averages to fall off during the war, have since turned up. Averages for the first eight months of 1950 and earlier calendar years are shown in Table 14.

Average freight train speed during the first eight months of 1950 increased one-tenth of a mile over the year 1949. If this average is maintained during the balance of the year, a new annual record will have been established. Passenger train speed increased four-tenths of a mile during the first eight months of 1950. This will also establish a new annual record, if maintained.

Table 12—Ton-miles Per Freight Train-hour

Year	Gross ton-miles	Net ton-miles
1950 (8 mos.)	44,263	20,070
1949	42,343	19,023
1948	39,903	18,778
1947	38,462	18,126
1946	37,057	17,173
1945	36,954	17,482
1944	37,298	17,623
1943	35,970	16,997
1942	35,503	16,132
1929	24,539	10,580

Table 13—Daily Mileage of Locomotives and Cars

Year	Freight locomotives	Passenger locomotives	Freight cars
1950 (8 mos.)	117.5	234.3	45.3
1949	112.5	228.5	42.9
1948	116.8	220.9	47.2
1947	120.3	219.0	48.8
1946	115.9	221.8	45.2
1945	118.4	226.9	49.3
1944	122.8	222.9	51.9
1943	124.5	220.9	51.0
1942	122.4	206.8	48.8
1929	91.2	164.5	34.4

Table 14—Average Train Speed (m.p.h.)

Year	Freight trains	Passenger trains
1950 (8 mos.)	17.0	37.4
1949	16.9	37.0
1948	16.2	36.7
1947	16.0	36.1
1946	16.0	35.5
1945	15.7	34.7
1944	15.7	34.8
1943	15.4	34.7
1942	15.8	35.7
1929	13.2	...

Average load per freight train increased in 1950 while average load per freight car remained at the same level as in 1949. In passenger service, average occupancy per train and per car both declined. Table 15 shows average load per car and per train for both freight and passenger services.

In freight service, the average load per train during the first eight months of 1950 increased 61 tons, or 5.4 per cent. This average, if maintained, will produce a new annual record.

In passenger service, decreases for the first eight months of 1950 compared with the year 1949 were 4.1 passengers per train, or 4.4 per cent; 1.1 passengers per car, or 6.1 per cent.

Here, again, results for 1950 were substantially better

Table 15—Average Train and Car Loads

Year	Freight Service: Net tons per train	Freight Service: Net tons per car	Passenger Service: Passengers per train	Passenger Service: Passengers per car
1950 (8 mos.)	1,199	31.4	88.2	17.0
1949	1,138	31.4	92.3	18.1
1948	1,176	32.9	101.1	19.4
1947	1,146	32.6	110.7	21.0
1946	1,086	31.3	144.3	24.5
1945	1,129	32.2	190.5	30.2
1944	1,139	32.7	200.7	31.9
1943	1,116	33.3	189.5	31.1
1942	1,035	31.8	125.5	23.1
1929	804	26.9	55.0	12.5

than before the war. The averages shown in Table 15 for 1950 were above those for 1929 by the following percentages:

Average freight train load	49.1 per cent
Average freight carload	16.7
Average passenger train occupancy	60.4
Average passenger car occupancy	36.0

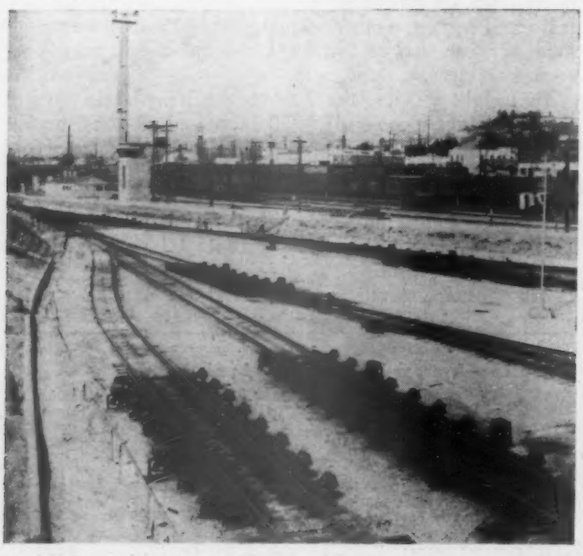
Railroad Safety

Three serious passenger train collisions in 1950, each due to man failure in observance of signal indications, marred an otherwise good railroad safety performance. Based on statistics for the first 10 months of the year, railroad employees in 1950 experienced their safest year in history, the fifth consecutive year of decline in employee casualty frequency rates. During that five-year period, the employee fatality rate per million man-hours was about cut in half, while the injury rate was reduced by approximately 45 per cent.

Notwithstanding the tremendous increase in number of motor vehicles using railway-highway grade crossings since the end of the second World War, a substantial postwar decline has taken place in the number of persons fatally and nonfatally injured in accidents at such crossings. Between 1945 and 1949, crossing fatalities were reduced by 21 per cent and crossing injuries by 15 per cent. There was some increase during the first 10 months of 1950 in accidents at highway grade crossings, but it seems likely that the record for the year as a whole will be the second best in the past 15 years, a period in which automobile registrations virtually doubled.

In the first 10 months of 1950, there was a slight reduction in the number of fatalities to trespassers on railroad property, but a small increase in the number of injuries. Here again, the railroads have made substantial postwar progress in the reduction of such casualties, and in view of conditions prevailing in 1950 the safety performance in that respect was satisfactory.

When measured against the high performance standards achieved in previous years, the statistical record of railroad passenger casualties in 1950 was one of the poorest in many years. However, analysis of the causes of the three serious collisions of passenger trains in 1950 responsible for this showing indicates that they were the result of circumstances largely beyond the control of railroad management. In each case, the protective devices provided by the railroads were functioning properly, but the danger signals displayed were ignored by the train personnel.



Modern freight yards keep cars moving

MOBILIZATION SHAPES PROSPECTS FOR 1951

Prospects for 1951 are of course dimmed by the great uncertainty prevailing in the international field. Barring the spread of current hostilities to worldwide proportions, however, the following developments may reasonably be anticipated.

With further buildup of the defense remobilization program, and with more men under arms, the volume of railroad freight and passenger traffic should be greater than in either 1948 or 1949. Operating revenues would show closely corresponding trends. Operating expenses and taxes, however, seem likely to increase at greater rates. Price levels have risen rapidly, and it is a question whether the newly inaugurated price stabilization can do more than slacken the pace of future increases. Various demands for changes in railroad wage rates and working conditions were still pending at the close of 1950. Whatever the final disposition of those demands may be, the railroad payroll for 1951 will almost certainly be greater than in 1950. Tax rates will be higher in 1951 than in 1950, in the form of increased normal and surtax corporate income levies, combined with an excess profits tax.

The presently insoluble question is whether increases in operating expenses will outrun anticipated increases in revenue. The altogether too likely answer, however, is that they will, and that increases in the price of railway transportation—rates and charges, and perhaps fares as well—will be required to close the gap. Even increased operating efficiency and economy, which with greater traffic and an improved plant should be effectuated in 1951, will hardly serve to bridge that gap.

In this connection, it should not be overlooked that comparing 1950 with 1929, total operating revenues for 1950 were half again as great as in 1929, but net railway operating income was less by some 20 per cent; the respective rates of return were 5¼ per cent for 1929 and 4¼ to 4½ per cent in 1950. The latter is a modest return, and traffic, rates and charges should be at such levels as will raise the return on investment to a more satisfactory point—to at least 6 per cent. With traffic at relatively high peacetime levels, even 4½ per cent is an inadequate return, and any moderate decline in traffic levels would play havoc with such a return.

In the midst of these uncertainties, we may tie to only one certain fact. As in all previous national emergencies, railroads of the United States are ready for the one that is now upon us. They will do their part in meeting the needs of that emergency, in whatever directions and to whatever proportions it may develop.


The Railroads
1950
in Pictures

LINE IMPROVEMENTS undertaken in previous years required large capital investment but continued to yield a substantial return in 1950 in improved operating efficiency

PUBLIC TELEPHONE SERVICE on moving trains, while still restricted to a few lines, continued in 1950 to attract patronage and to add to the convenience of railroad travel

COAL LOADINGS were up almost 16 per cent over 1949, despite a miners' strike which lasted until March 6

NEW PASSENGER TRAINS put in service in 1950 included the Wabash "Blue Bird," with popular dome cars, running between Chicago and St. Louis

FASTER L.C.L. SERVICE was provided by several railroads, especially in the East

NEW DIESEL-ELECTRIC locomotives included the Fairbanks-Morse Consolidation line

THE LOUISVILLE & NASHVILLE commemorated its hundredth anniversary in April; President J. B. Hill was speaking

NEW HAVEN PRESIDENTS changed when Frederic C. Dumaine (left) succeeded Laurence F. Whittemore

MORE FREIGHT CAPACITY is the result of large yard improvements, as on the Chesapeake & Ohio at Russell, Ky.

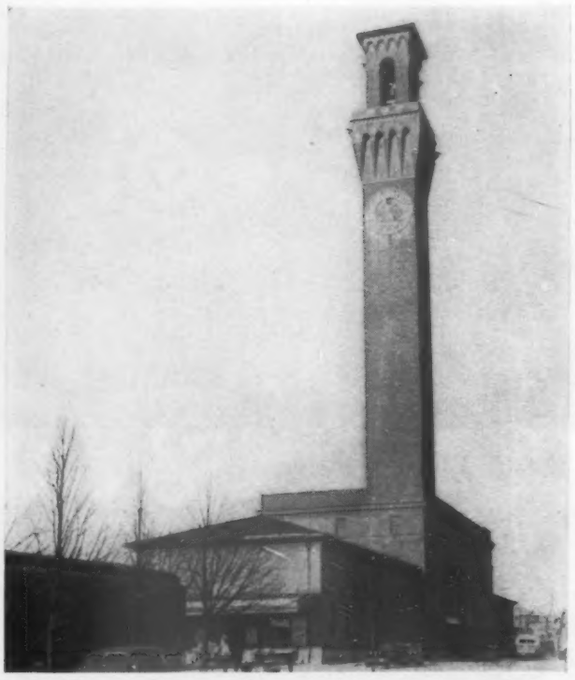
AKRON'S NEW STATION was one of several completed last year

SPECIALIZED EQUIPMENT like these pulpwood cars is provided to suit customers' requirements

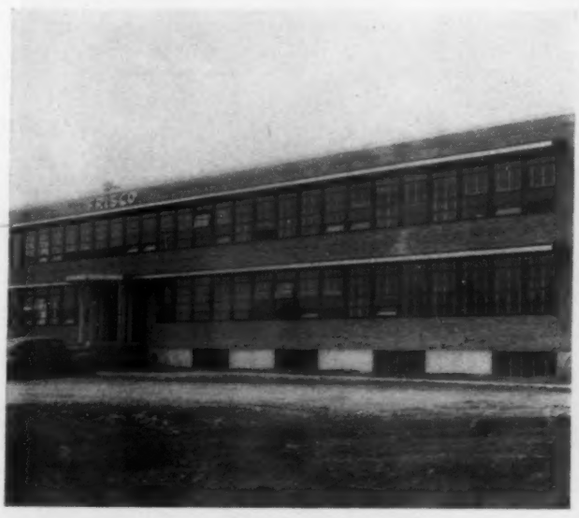
ICING OF REFRIGERATOR CARS at Denver is speeded up by a track-mounted machine

COAL HANDLING FACILITIES have been improved at many ports on tidewater and at terminals on the Great Lakes

SECOND-MORNING DELIVERY of merchandise was inaugurated by the principal lines from New York to Chicago and other Midwest cities. (Above: The Erie's "Flying Saucer")



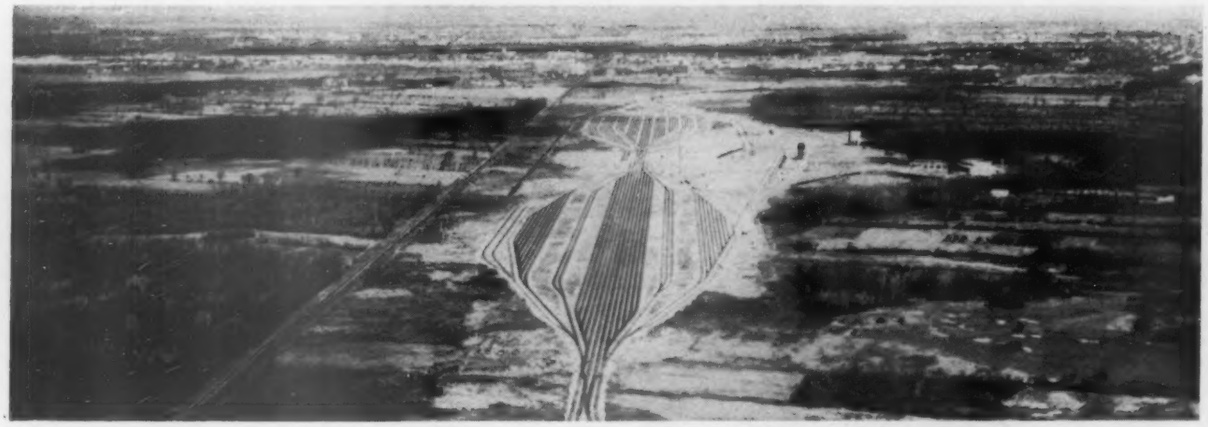
STATIONS WERE SOLD by the New York, New Haven & Hartford, such as this one (right) at Waterbury, Conn.



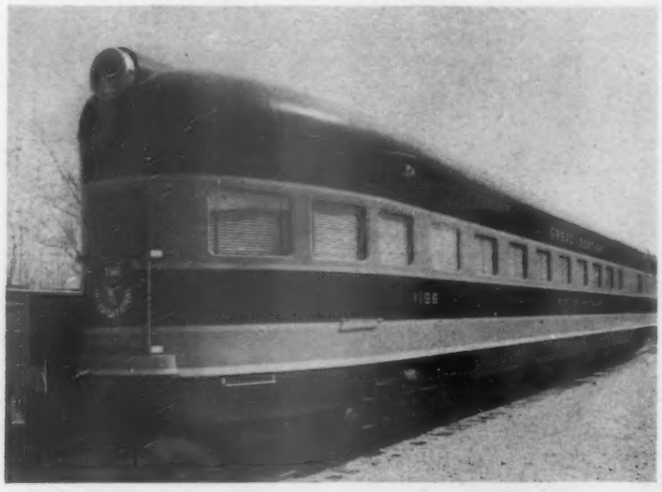
NEW OFFICE BUILDINGS featured innovations in design and pleasant surroundings for employees

MEAL SERVICE ON TRAINS was simplified on several roads, but dining car losses remained disturbing

THE DIESEL-POWERED RAIL CAR was put in service in many parts of the country, both in suburban and in long main-line service

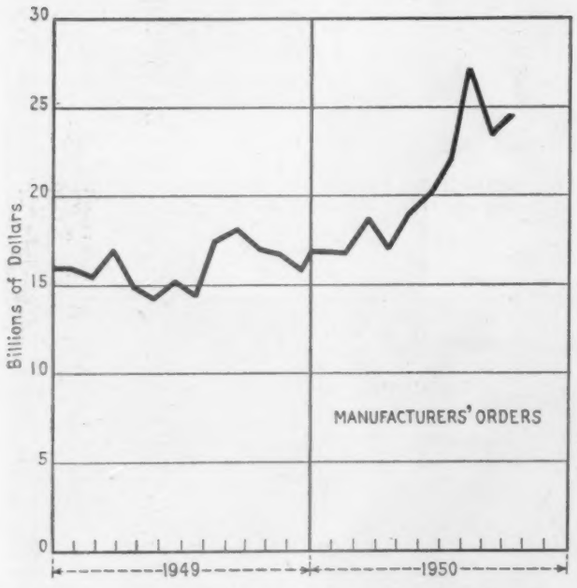


THE CANADIAN PACIFIC'S new freight yard at Montreal has greatly increased the road's capacity at that important terminal

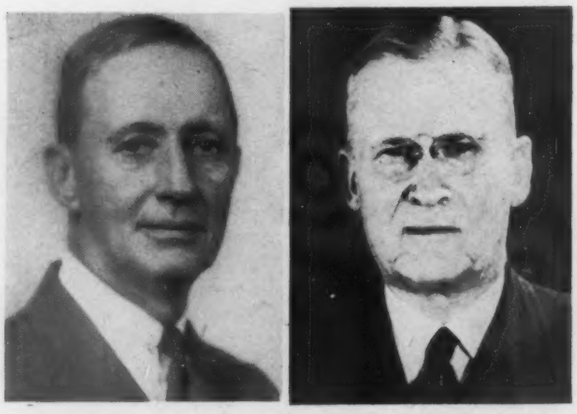


NEW GREAT NORTHERN TRAINS—like the "International"—brought luxury at low fares to the Northwest

PUSH-BUTTON SWITCHING sets up routes to 48 tracks in the new Canadian Pacific yard

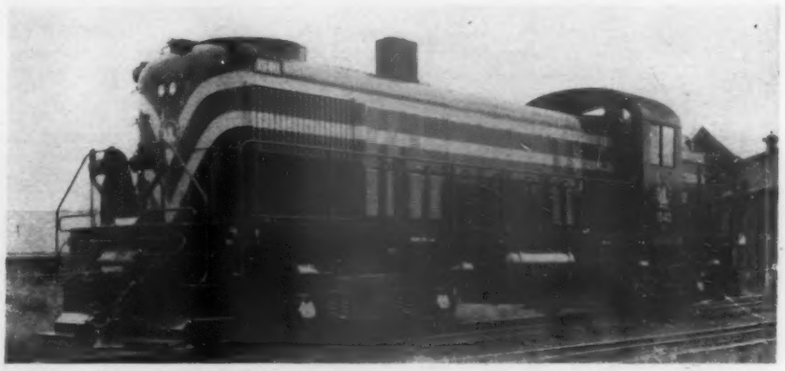


THE MILLS WERE BUSY IN 1950, Department of Commerce figures show, and railroad traffic was correspondingly better



THE CENTRAL OF GEORGIA elected M. P. Callaway (right) president to succeed the late Marion J. Wise

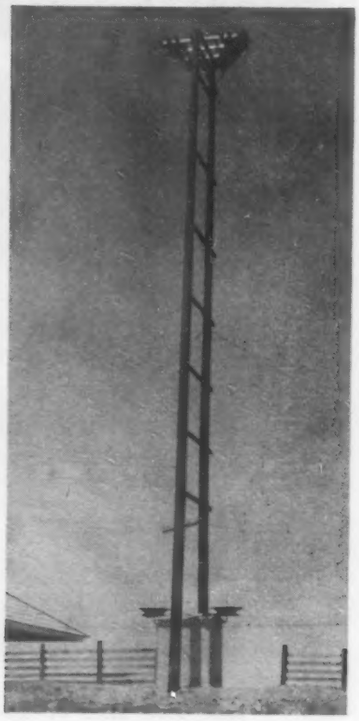
ANOTHER BIG GRAIN CROP taxed the freight car supply, but the railroads kept the elevators filled to capacity

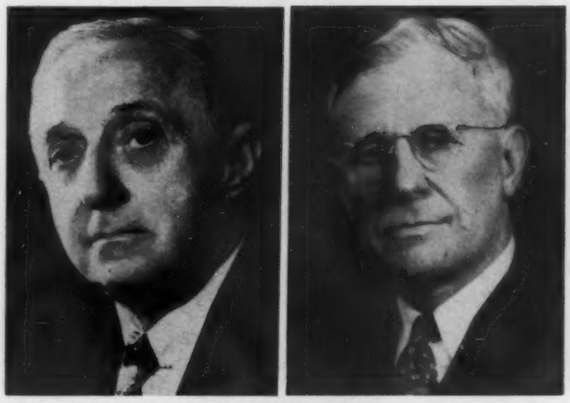


A DUAL-PURPOSE SWITCHER was introduced by American Locomotive-General Electric in 1950

BETTER SERVICE at many points results from large outlays for the modernization of stations (above, Williamson, W. Va., on the Norfolk & Western)

MICROWAVES were applied to railroad use by the Chicago, Rock Island & Pacific in storm-swept areas (below)





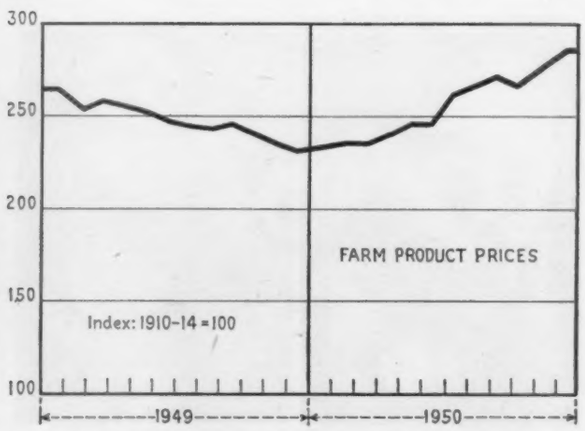
JOHN E. TILFORD REPLACED J. B. HILL (left) as president of the century-old Louisville & Nashville

THE ELKHORN TUNNEL on the main line of the Norfolk & Western, completed during the year, enabled that road to discontinue electric locomotive operations on mountain grades

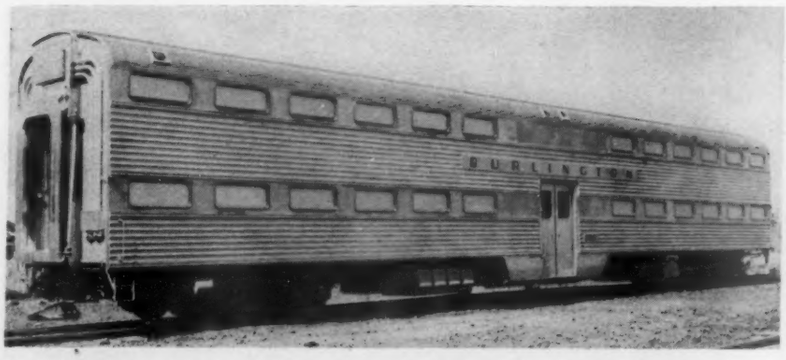
THE DOME CAR, larger windows, glassed-in rear ends and other features of passenger car design are encouraging travelers by train to enjoy the scenery along the line

OVERHEAD TOW SYSTEMS for platform trailers were installed during 1950 in a number of busy l.c.l. freighthouses

TEEN-AGERS ON THE CREW BOARD AGAIN? Manpower shortages loom once more as defense activities increase



FARMERS PROSPERED IN 1950, Department of Agriculture figures show, and one result was more freight for the railroads

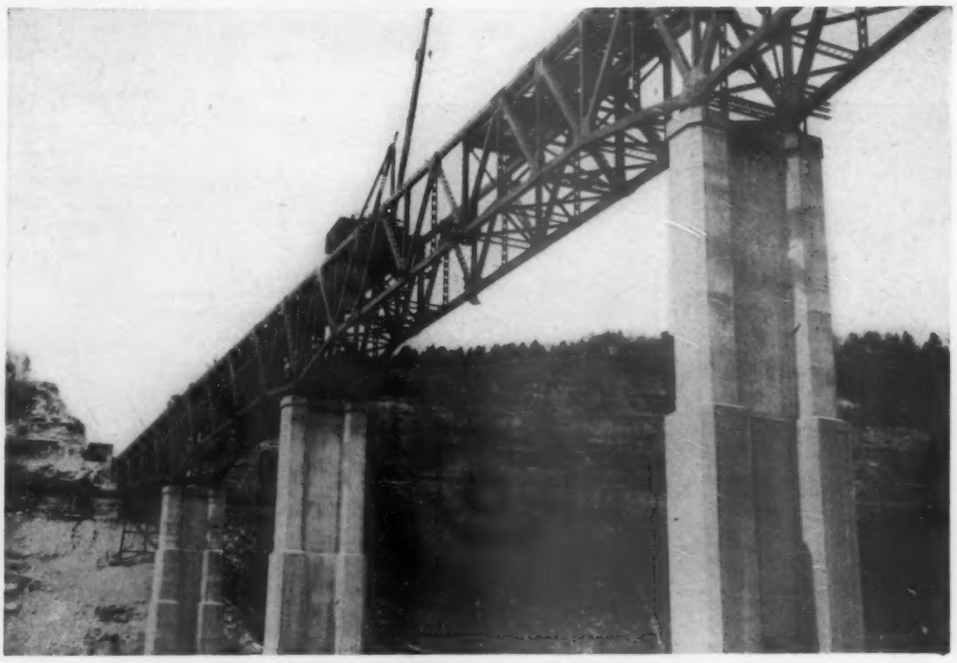


DOUBLE-DECK CARS are one answer to the mass-transportation task commuters impose on railroads serving metropolitan areas

TRAIN CREWS USE RADIO to cut delays en route, as here on the Erie's main line

EMPLOYEE TRAINING CONFERENCES were widely successful in 1950 on many railroads

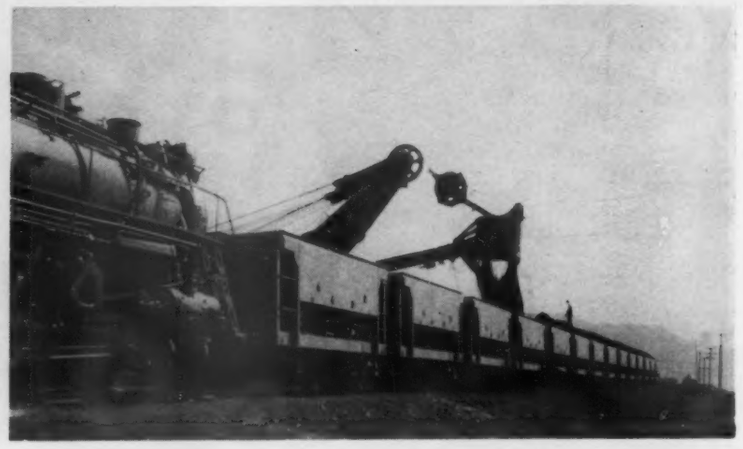
CONTAINERS are used by several roads to reduce the disproportionate loss and damage incident to l.c.l. merchandise handling



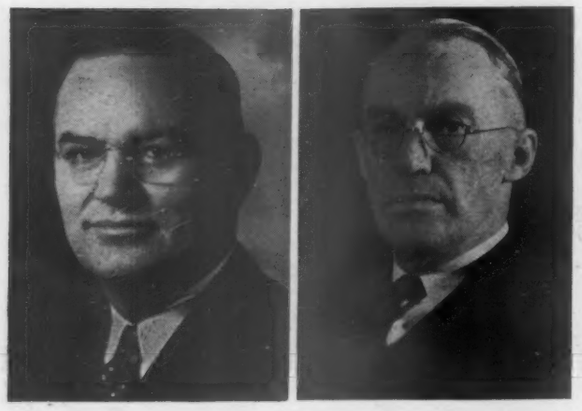
LARGE BRIDGES completed in 1950 included the Southern's deck-truss crossing of the Cumberland river in Kentucky

COLORFUL AND RESTFUL INTERIORS characterize the new trains—as here in the Southern Pacific's "Sunset Limited"

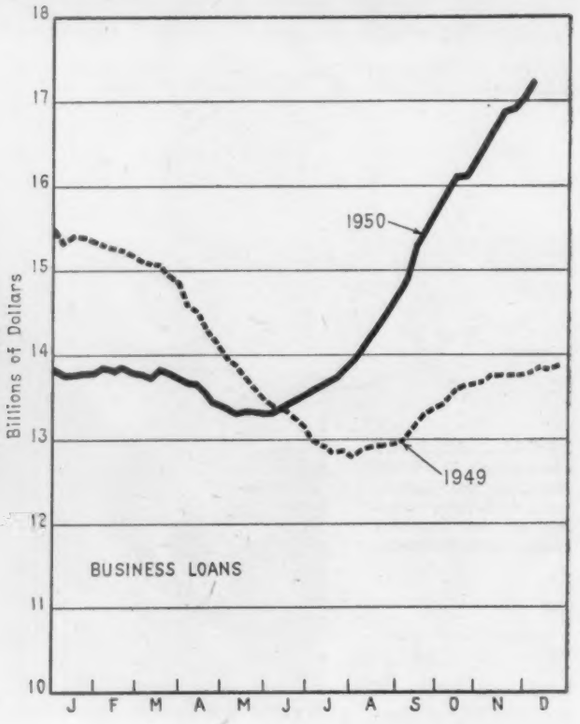
WORKING FOR THE ARMY for the fourth time in seven years (above)



ORE LOADINGS were up 14 per cent in 1950 as compared to 1949 (right)



J. P. KILEY (left) took over the presidency of the Chicago, Milwaukee, St. Paul & Pacific when Charles H. Buford retired



TRADE WAS ACTIVE IN 1950, and business firms borrowed rapidly increasing amounts, the Federal Reserve Board reports

WAYSIDE AND CAB SIGNALING controlled by a new system of coded track circuits, was installed on 137 miles of Union Pacific double track in 1950 (left)

WAGE AND RULES CASES got so complicated in 1950 that railroads used "mock-ups" to explain air-hose coupling techniques to government boards (right)

TOLEDO'S NEW STATION was inaugurated with a week of civic festivities

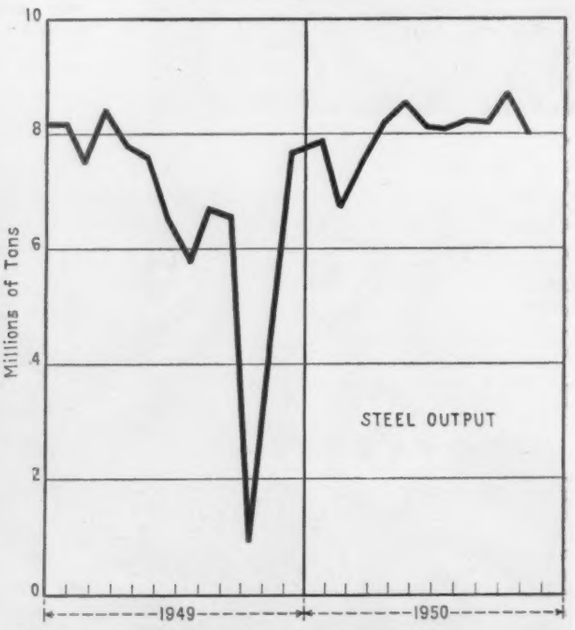
ROAD DAMAGE from overloaded trucks continued, but highway authorities showed more concern

NEW SLEEPING CARS provide various private room accommodations, but some roads continue to acquire cars with modern open sections (right)

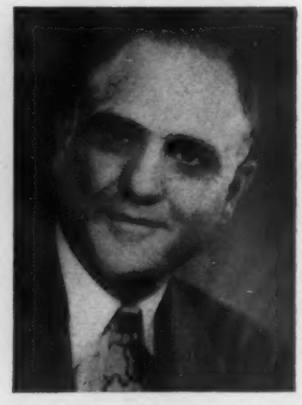
THE MILWAUKEE'S CENTENNIAL was celebrated in November as that road completed its first century of service

COMMUTATION TRAVEL has held up much better than full-fare patronage — Fare increases have been held up, too

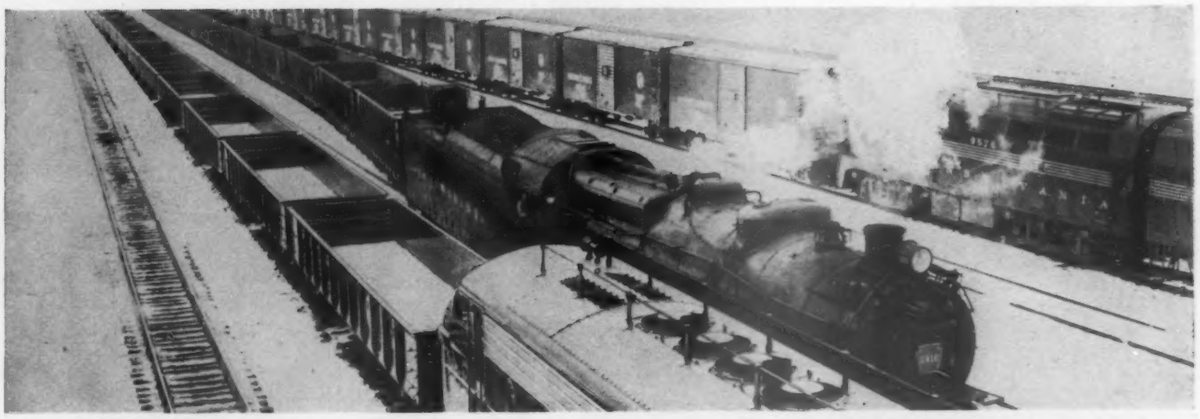
PANHANDLE DIVISION LINE CHANGES were completed by the Pennsylvania in 1950, ending onerous restrictions on height and width of loads in that territory



STEEL PRODUCTION TOPPED RECORDS in 1950, showing a drop only when the coal miners were on strike. (American Iron & Steel Institute data)



THE DEFENSE TRANSPORT ADMINISTRATION was set up to deal with the impact of war activities on the railroads and other carriers. James K. Knudson, a member of the Interstate Commerce Commission (left), was named administrator. Other D.T.A. officers (left to right) include Homer C. King, deputy administrator; Walter S. Rainville, Jr., executive assistant to the administrator; and P. L. Siemiller, director of the manpower division



NEW AND REBUILT CARS were coming off the production lines at an increasing rate as the year closed

THE GAS TURBINE ELECTRIC locomotive "looks promising," said President A. E. Stoddard of the Union Pacific, which ordered ten of this type in December following extensive tests

"WILD-CAT" STRIKES of trainmen at Chicago, St. Louis, Washington and other terminals tied up Christmas mails

THE NORTHERN PACIFIC got a new president at the end of the year; R. S. Macfarlane (far right) succeeded C. E. Denney

Coal-dumping machines that empty one car a minute contribute to the railroads' ability to handle the commerce of a thriving economy, but large investments of new capital are required to provide such facilities

1950 Capital Expenditures Totaled $1.1 Billion . . .

Down about $200 million from the all-time high of 1949—This year expected to set new record with outlays around $1.5 billion—Availability of materials and manpower rather than railroad budgets will govern totals

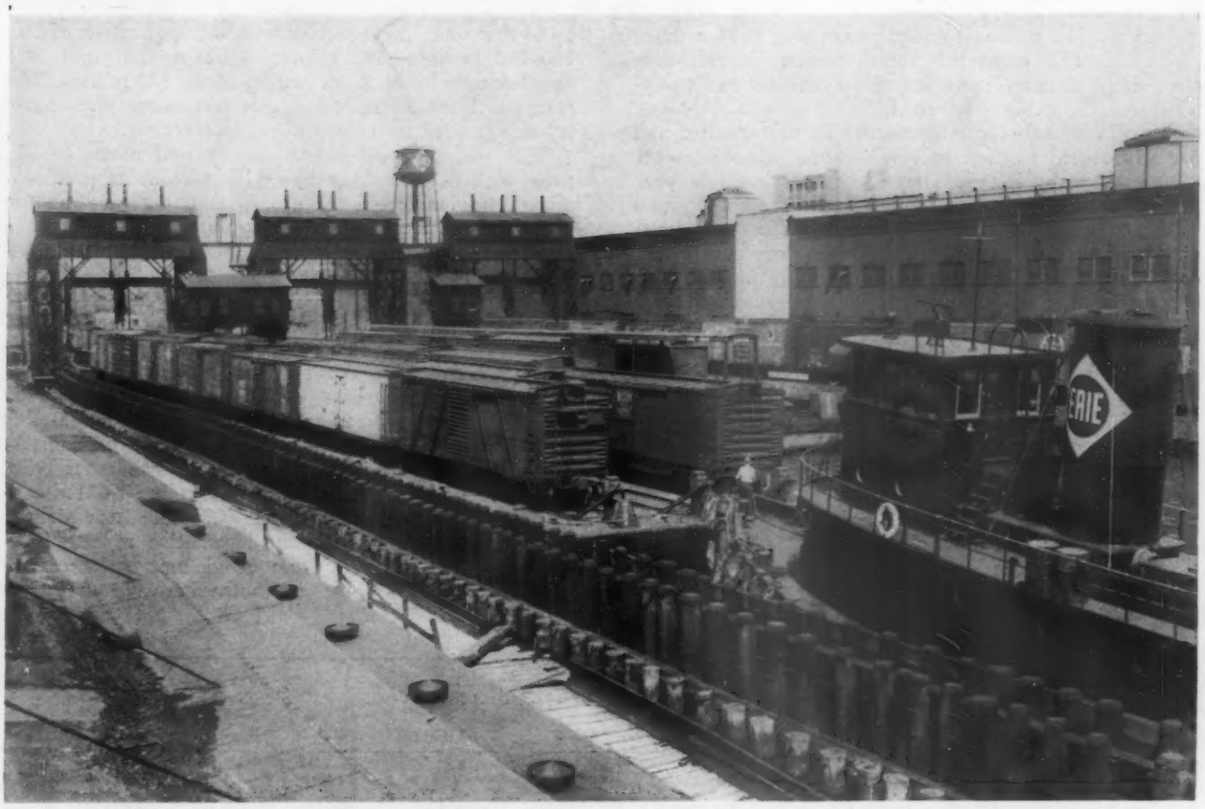
By WALTER J. TAFT
Washington Editor

Last year's gross capital expenditures of the Class I railroads totaled about $1.1 billion. While this was less than the outlays reported for 1949 and 1948, it was above the expenditures of any other previous year since 1921, the earliest for which comparable figures are available.

The outlook for this year is that total of outlays for new equipment and fixed facilities may well reach an all-time high of $1.5 billion or more, topping the previous peak of $1.3 billion reported for 1949. Supplies of materials and, perhaps, manpower, rather than railroad budgets, will determine the 1951 expenditures. The railroads have projected programs which are expected to absorb all available materials and manpower.

The estimate which put the gross capital expenditures of 1950 at about $1.1 billion (the exact figure is $1,064,390,000) was based on actual expenditures for last year's first three quarters and estimates for the fourth quarter, as reported by Class I roads to the Interstate Commerce Commission. It was given by the commission's Bureau of Transport Economics and Statistics in the December 15, 1950, issue of the bureau's "Monthly Comment." The fourth-quarter estimates did not include returns from four roads which made third-quarter expenditures of $15.5 million.

As compared with 1949's peak of $1.3 billion, these 1950 expenditures will be down 17.7 per cent. How the railroads' plans expanded during the second half of the



Railroads constantly need fresh capital for many kinds of additions and betterments, such as marine operations at the principal ports. New cars and locomotives can be financed by equipment trusts or leases, but many roads can obtain funds for fixed property improvements only from earnings and then only in better-than-average years

year is shown by recalling what the outlook was when the year began.

For the March, 1950, issue of the "Comment," the commission's bureau had returns indicating that the Class I roads expected to make gross capital expenditures of only $870 million last year. That would have represented a drop of 31.5 per cent below the 1949 total. By mid-September, when actual expenditures for the first half were available, the indications were that the 12-months total would be $1,039 million. That would have represented a drop of 19.8 per cent below 1949.

The 1950 total of $1,065 million included $787 million for equipment and $278 million for road—declines of 19.2 per cent and 13.3 per cent, respectively, below the comparable 1949 totals. Actual outlays during last year's first three quarters totaled $768 million,

Table I — Selected Balance Sheet Items — Class I Line-Haul Railways

Year	Cash and Temporary Cash Investments (000)	Total Current Assets (000)	Total Current Liabilities (000)	Excess of Current Assets over Liabilities (000)	Total Long-Term Debt (000)	Total Corporate Surplus (000)
1929*	$677,955	$1,717,953	$1,200,984	$516,969	$11,138,121	$5,029,171
1930*	592,071	1,510,975	1,162,170	348,805	11,174,816	4,577,730
1931	419,510	1,213,350	1,147,239	66,111	11,153,678	4,395,508
1932	379,136	1,063,271	1,130,731	67,460	11,247,777	4,094,531
1933	394,117	1,034,560	1,261,382	— 226,822	11,112,005	3,900,883
1934	380,212	1,058,326	1,571,326	— 412,995	11,041,472	3,714,302
1935	439,403	1,086,467	1,670,767	— 584,300	10,821,788	3,507,220
1936	578,343	1,292,421	1,885,574	— 593,153	10,452,266	3,349,889
1937	392,486	1,143,990	1,937,830	— 793,840	10,686,814	3,126,391
1938	480,550	1,120,968	2,243,961	—1,122,993	10,558,723	2,739,742
1939	578,359	1,292,705	2,555,903	—1,263,198	10,352,646	2,563,879
1940	680,400	1,442,142	697,200†	744,942	11,288,311†	2,474,249
1941	904,600	1,914,544	1,115,320‡	799,224	11,186,063	2,666,625
1942	1,736,933	3,065,093	1,806,030	1,259,063	10,879,476	3,167,986
1943	2,897,275	4,497,065	2,923,078	1,573,987	10,462,770	3,748,508
1944	2,753,560	4,488,042	2,844,042	1,643,832	9,830,186	4,327,893
1945	2,545,909	4,345,830	2,108,245	2,237,585	9,286,001	4,608,846
1946	1,950,874	3,494,260	1,584,433	1,909,827	9,093,281	4,638,958
1947	1,908,887	3,575,914	1,942,772	1,633,142	8,831,806	5,174,106
1948	1,947,046	3,675,819	2,065,928	1,609,891	8,960,451	5,702,948
1949	1,570,636	3,067,146	1,696,558	1,370,588	9,154,027	5,949,064
1950	1,954,834	3,593,652	2,014,630	1,579,022	(1950 totals are Sept. 30)	

*Switching and Terminal Companies included.
†In 1940 and thereafter long-term debt in default is included in long-term debt. In years prior thereto it is included in current liabilities. Likewise in 1940 and thereafter defaulted interest is removed from current liabilities to deferred liabilities.
‡Tax liability included in 1941 and thereafter.

including $574 million for equipment and $194 million for road. The estimated fourth-quarter expenditures were $297 million, including $214 million for equipment and $83 million for road.

As to 1951, only the estimates for its first quarter had been submitted by the railroads when the December "Comment" was issued. They indicated that this year got under way with gross capital expenditures on a level 43.6 per cent above those of last year's first quarter—$305 million as compared with $213 million. The former contemplated expenditures totaling $237 million for equipment and $68 million for road, as compared with outlays of $159 million and $54 million, respectively, during the first quarter of 1950. On these bases, the first-quarter equipment expenditures would be up 49.2 per cent, while the expenditures for road facilities would be up 27 per cent.

The reported expenditures and estimates for 1950, and the estimates for 1951, take no account of equipment being leased from the Equitable Life Assurance Society on a monthly-rental basis. There are no capital expenditures involved in such leasing arrangements. In September, after the leasing plan had been in effect for six months, Equitable reported that it had been used up to that time in connection with the acquisition of 19,150 freight cars costing over $102 million and 207 diesel-electric locomotives costing about $30 million. The plan was launched in March as a freight-car plan. Later it was extended to include diesel locomotives.

That the 1951 expenditures may well reach an all-time peak of something like $1.5 billion, as predicted above, was indicated by programs under way as the year began. The equipment program alone, if its goal is reached, would involve expenditures of more than a billion dollars.

1951 Equipment Program on $1.1 Billion Basis

As to freight cars, that program contemplates the construction of 10,000 cars a month—a total of 120,000 for the year. At an average cost of about $5,500 this would involve a total expenditure of $660 million. As to locomotives, there were on order on December 1, 1950, a total of 1,657 new locomotives, including 1,634 diesel-electrics, 17 steam, and 6 electrics. While it is difficult to put a dollar figure on the locomotive program, because the diesels range from single-unit switchers to multiple-unit road jobs, an authoritative source has

Changes in Cash and Current Assets of Individual Large Railroads*

	Cash & Temporary Cash Investments Sept. 30		Inc. or Dec.	Total Current Assets		Total Current Liabilities		Excess of Current Assets over Liabilities		Inc. or Dec.
	1950	1949	%	End of Sept. 1950	End of Sept. 1949	End of Sept. 1950	End of Sept. 1949	End of Sept. 1950	End of Sept. 1949	%
A. T. & S. F.	145,449,078	129,553,681	+ 12	234,758,755	212,272,687	112,238,068	95,599,116	122,520,687	116,673,571	+ 5
A. C. L.	18,493,445	13,291,936	+ 41	43,007,645	37,564,160	21,886,311	18,683,997	21,121,334	18,880,163	+ 12
B. & O.	58,204,846	38,534,015	+ 51	108,091,699	90,924,764	57,729,675	50,192,418	50,362,024	40,732,346	+ 24
B. & M.	18,864,471	16,203,662	+ 16	30,900,780	28,803,312	17,990,320	16,429,039	12,910,460	12,374,273	+ 4
C. of Ga.	3,876,946	3,127,594	+ 24	12,551,646	10,201,646	7,139,182	6,475,986	5,412,464	3,725,660	+ 45
C. of N. J.	4,715,527	2,425,720	+ 94	17,534,623	12,627,259	12,373,222	9,528,077	5,161,401	3,099,182	+ 67
C. of Pa.	2,791,614	4,686,229	− 40	7,925,448	8,376,546	4,050,525	3,360,791	3,874,923	5,015,755	− 23
C. & O.	56,175,820	39,137,802	+ 44	99,845,394	84,535,125	77,863,178	69,909,625	21,982,216	14,625,500	+ 50
C. & E. I.	3,839,231	2,758,569	+ 39	8,265,850	7,694,916	6,179,857	5,382,301	2,085,993	2,312,615	− 10
C. & N. W.	22,917,018	12,343,528	+ 86	54,401,018	46,924,295	37,228,337	36,781,251	17,172,681	10,143,044	+ 69
C. B. & Q.	31,980,103	23,294,241	+ 37	75,625,696	63,912,833	51,571,301	43,240,805	24,054,395	20,672,028	+ 16
C. G. W.	6,429,143	2,725,634	+136	11,821,965	7,654,343	7,953,897	6,422,611	3,868,068	1,231,732	+214
C. M. St. P. & P.	52,580,638	34,347,261	+ 53	104,375,024	84,134,602	48,958,887	42,030,405	55,416,137	42,104,197	+ 32
C. R. I. & P.	33,875,551	41,924,502	− 19	66,887,157	70,760,749	38,096,610	42,200,437	28,790,547	28,560,312	+ 1
C. St. P. M. & O.	4,281,433	3,414,662	+ 25	9,135,126	8,816,176	5,919,622	5,823,102	3,215,504	2,993,074	+ 7
D. & H.	10,437,453	7,226,690	+ 44	18,418,334	15,143,874	7,514,448	6,558,598	10,903,886	8,585,276	+ 27
D. L. & W.	10,480,500	10,088,694	+ 4	23,276,126	23,596,988	13,958,467	15,144,580	9,317,659	8,452,408	+ 10
D. & R. G. W.	20,531,216	16,649,764	+ 23	37,228,345	33,539,916	15,289,574	22,137,127	21,938,771	11,402,789	+ 92
D. M. & I. R.	13,783,961	12,628,386	+ 9	22,010,007	19,157,030	15,904,296	16,472,246	6,105,711	2,684,784	+127
E. J. & E.	22,260,155	14,177,457	+ 57	27,606,158	18,921,559	19,163,144	14,798,360	8,443,014	4,123,199	+105
Erie	29,338,910	19,257,187	+ 52	52,437,890	42,193,051	33,815,990	29,812,167	18,621,900	12,380,884	+ 50
G. T. W.	2,208,659	1,224,139	+ 80	9,725,948	8,674,711	9,664,490	8,693,640	61,458	−18,929	†
G. N.	35,761,389	36,171,152	− 1	84,478,910	76,444,896	45,532,371	39,575,085	38,946,539	36,869,811	+ 6
G. M. & O.	17,190,493	12,301,379	+ 40	35,355,504	28,906,539	21,125,467	18,027,189	14,230,037	10,879,350	+ 31
I. C.	80,225,231	74,688,615	+ 7	117,531,830	114,252,509	73,045,757	72,225,251	44,486,073	42,027,258	+ 6
L. V.	14,194,573	9,900,632	+ 43	25,059,913	22,704,346	12,638,986	9,693,546	12,420,927	13,010,800	− 5
L. I.	9,335,402	2,847,754	+228	18,804,626	15,094,359	23,839,318	19,934,669	−5,034,692	−4,840,310	†
L. & N.	52,788,128	40,464,232	+ 30	99,035,798	76,145,654	38,973,027	30,831,905	51,062,771	45,313,749	+ 13
M. St. P. & S. S. M.	8,679,789	10,539,542	− 18	17,337,183	18,868,703	9,429,715	8,986,227	7,957,468	9,882,476	− 20
M.-K.-T.	11,744,682	9,632,126	+ 22	24,284,535	22,288,462	16,483,202	16,429,316	7,801,333	5,859,146	+ 33
N. Y. C.	69,490,445	54,809,281	+ 27	183,337,647	165,910,313	128,417,399	114,852,070	54,920,248	51,058,243	+ 8
N. Y. C. & St. L.	30,989,290	6,672,852	+364	53,525,359	22,913,996	38,111,699	19,022,190	15,413,660	3,891,806	+296
N. Y. N. H. & H.	34,920,165	27,712,917	+ 26	54,710,044	47,167,180	30,312,410	28,394,956	24,397,634	18,772,224	+ 30
N. & W.	38,927,871	35,656,622	+ 9	78,272,746	69,973,985	36,987,341	36,694,307	41,285,405	33,279,678	+ 24
N. P.	28,555,637	15,076,821	+ 89	72,810,351	55,388,736	30,760,607	28,268,835	42,049,744	27,119,901	+ 55
P. R. R.	187,851,012	117,481,184	+ 60	336,401,548	261,471,721	140,738,395	146,764,635	195,663,153	114,707,086	+ 71
P. & L. E.	6,291,958	2,566,169	+145	13,996,769	10,056,927	12,359,481	12,478,103	1,637,288	−2,421,176	†
Reading	18,987,189	10,719,759	+ 77	36,344,764	28,629,376	25,782,921	23,811,754	10,561,843	4,817,622	+119
St. L.-S. F.	34,424,366	29,452,415	+ 17	52,788,792	48,471,066	25,806,964	22,319,508	26,981,828	26,151,558	+ 3
St. L. S. W.	15,436,718	21,468,248	− 28	25,542,829	31,324,929	15,113,720	14,207,349	10,429,109	17,117,580	− 39
S. A. L.	19,106,245	20,001,372	− 5	39,907,646	39,443,878	28,733,056	24,940,492	11,174,590	14,503,386	− 23
Southern	56,277,331	42,991,130	+ 31	90,860,760	74,895,800	58,859,667	47,266,460	32,001,093	27,629,340	+ 16
S. P. System	148,874,197	92,491,018	+ 61	252,221,331	189,962,141	126,620,160	103,029,852	125,601,171	86,932,289	+ 44
T. & P.	17,879,938	12,494,089	+ 43	30,722,451	26,363,371	12,424,458	10,951,146	18,297,993	15,412,225	+ 19
U. P.	107,708,940	91,924,708	+ 17	199,197,854	174,221,739	115,998,130	94,028,276	83,199,724	80,193,463	+ 4
Wabash	22,967,040	21,674,532	+ 6	34,737,938	34,936,600	24,376,654	23,920,415	10,361,284	11,016,185	− 6

*Certain capital and other reserve funds, particularly of roads recently reorganized, are not included. Missouri Pacific figures are omitted because they are unavailable for 1949 as operations were suspended for several months.

†Current liabilities exceeded current assets in one or both years.

Capital expenditures in 1950 totaled $278 million for fixed properties like modern freight yards and stations,

and $787 million for new locomotives, streamline passenger trains and thousands of large-capacity freight cars

estimated that new locomotives placed in service in 1951 will involve expenditures totaling "more than half a billion dollars."

Thus the 1951 equipment program is on a $1.1 billion basis. If expenditures for road remain only on the 1950 basis, the year's total would be an all-time high of $1,378 million. The expenditures for road facilities, of course, will be substantially in excess of such expenditures last year. As noted above, the first-quarter estimates indicate that they are up 27 per cent.

Like car and locomotive fleets, road facilities must be modernized and expanded to meet the needs of increased traffic resulting from the defense program. Accelerated-amortization provisions designed to encourage such modernization and expansion programs were included by Congress in the tax law enacted last September. The provisions are applicable to defense facilities (including both road and equipment) acquired after December 31, 1949.

They permit the amortization of such facilities over a period of 60 months—provided they have been certified as necessary to the national defense under certifying arrangements set up by the President. The President has designated the chairman of the National Security Resources Board as the certifying authority.

As the foregoing shows, the 1951 expenditure programs have been framed on the basis of the railroads' determination to prepare for any transport job for which the country may call upon them. That should not obscure the fact that the level of earnings determines the long-run ability of a private industry to make capital expenditures for new and improved facilities. This was pointed up by President William T. Faricy of the Association of American Railroads in a message to the New York Railroad Club on the occasion of its seventy-eighth anniversary dinner which was held December 7, 1950.

Correlation Between Earnings and Investment

"There is," Mr. Faricy said, "a close and not always fully realized correlation between earnings and investment, on the one hand, and capacity and economy, on the other. The four factors, indeed, go hand in hand. Without earnings, present or prospective, investment lags. Without investment in improved plant and facilities, capacity fails to keep up with demand. Without improved plant, efficiency sinks and operating costs rise. Conversely, good earnings mean more investment in better plant, which means greater capacity and reduced costs.

"The railroads have spent since the end of the Second World War $4¾ billion on things which mean added capacity and increased efficiency. . . . The results of such expenditures are found in the fact that there has been no failure to meet the demands of defense, and in the further fact that with the sharp rise in carloadings this fall there has actually been a lessening of reported car shortages. These expenditures have not been due to lush earnings, for railroad earnings since the war and especially in 1949, have been lean indeed. These huge investments have been made by the railroads as an act of faith in the future—a faith that is fortunate for America."

In the latter connection, Mr. Faricy's message had previously asserted that the "real problem is not whether railroads will be needed but how railroads, as self-supporting, tax-paying, business-operated enterprises, may be maintained in the necessary strength and health." The "only way" this can be done is through earnings "which are adequate to warrant and support continuing investment in improved facilities," the A.A.R. president advised.

President Walter S. Franklin of the Pennsylvania also sent a message to the New York club. He, too, discussed the railroads' improvement program, including in such discussion a tribute to the supply industry and a call for continuing cooperation and ingenuity from that industry.

"Members of the railroad supply industry," Mr. Franklin said, "have had an important part in the history of development and improvement and contributed their share to our vast re-equipment job. There can be no limits to the production gains the suppliers will develop in the future, the tools they will create to give them existence, and the products they will make to improve the quality of railroad service. Difficulties in obtaining materials must be overcome and production schedules and deliveries maintained. Railroads must have the equipment most suited to the job which, through its efficiency, economy and attractiveness, builds business for them and helps them to operate at lower cost."

FINANCIAL PICTURE SHOWS SLIGHT IMPROVEMENT

Higher revenues, careful control of expenses lead to increased dividends, better prices for rail securities, and successful financing moves despite the unsatisfactory labor situation

By GARDNER C. HUDSON
News and Financial Editor

Positive proof might be difficult, and there is admittedly room for debate. But, on the whole, it is probably safe to say that the railroad financial picture at the end of 1950 looked a little better than at the beginning.

There was, to be sure, no important change in the two major factors which have kept the industry in poor financial health for the past two decades. Specifically, there was no indication of any letup in the constant succession of demands of railroad labor organizations for consistently larger wage increases and seemingly endless working rule concessions. Nor was there any sign of recognition by employee leaders that an economically sound railroad industry must be allowed to retain some of its earnings for property improvement, debt retirement, and other purposes, and be permitted to pay out some of those earnings in interest and dividends, to satisfy present investors and to attract potential new investors to provide capital for further improvements.

Neither, save in one or two isolated instances, was there any tangible action toward equalizing the grossly unfair conditions under which railroads are required to compete with subsidized and more leniently regulated agencies of transportation. There was indeed some gratifying evidence of increasing awareness of the fundamental inequality of prevailing conditions, but that awareness was not generally translated into action.

Favorable Factors

One or both of those situations must be corrected before there can be any major change for the better in railroad finances. But 1950 did, otherwise, produce a number of other definitely encouraging developments.

1. Traffic and gross revenues (as pointed out elsewhere in this issue) both showed a substantial increase over 1949, and all present indications point to a high level of traffic for several years to come. By keeping expenses down almost at 1949 levels—largely as a result of their extensive postwar program of capital improvements—the railroads were able to carry down to net income a large proportion of the increase in gross; the growth in net, in fact, was much greater than the growth in either traffic or in gross revenues.

2. Because of increased earnings, the railroads were able substantially to increase their dividend disbursements, thus making their outstanding securities more attractive to investors.

3. At least two major roads obtained, on favorable terms, substantial amounts of new capital, which, except for that raised by equipment trust certificates, has been a rare commodity in the railroad industry for many years.

4. A number of other roads succeeded in refunding, on more favorable terms, outstanding bond issues, or in effecting voluntary reorganization or capital readjustment plans.

5. New methods of financing rolling stock and signal equipment were made available.

Dividends and Stock Prices

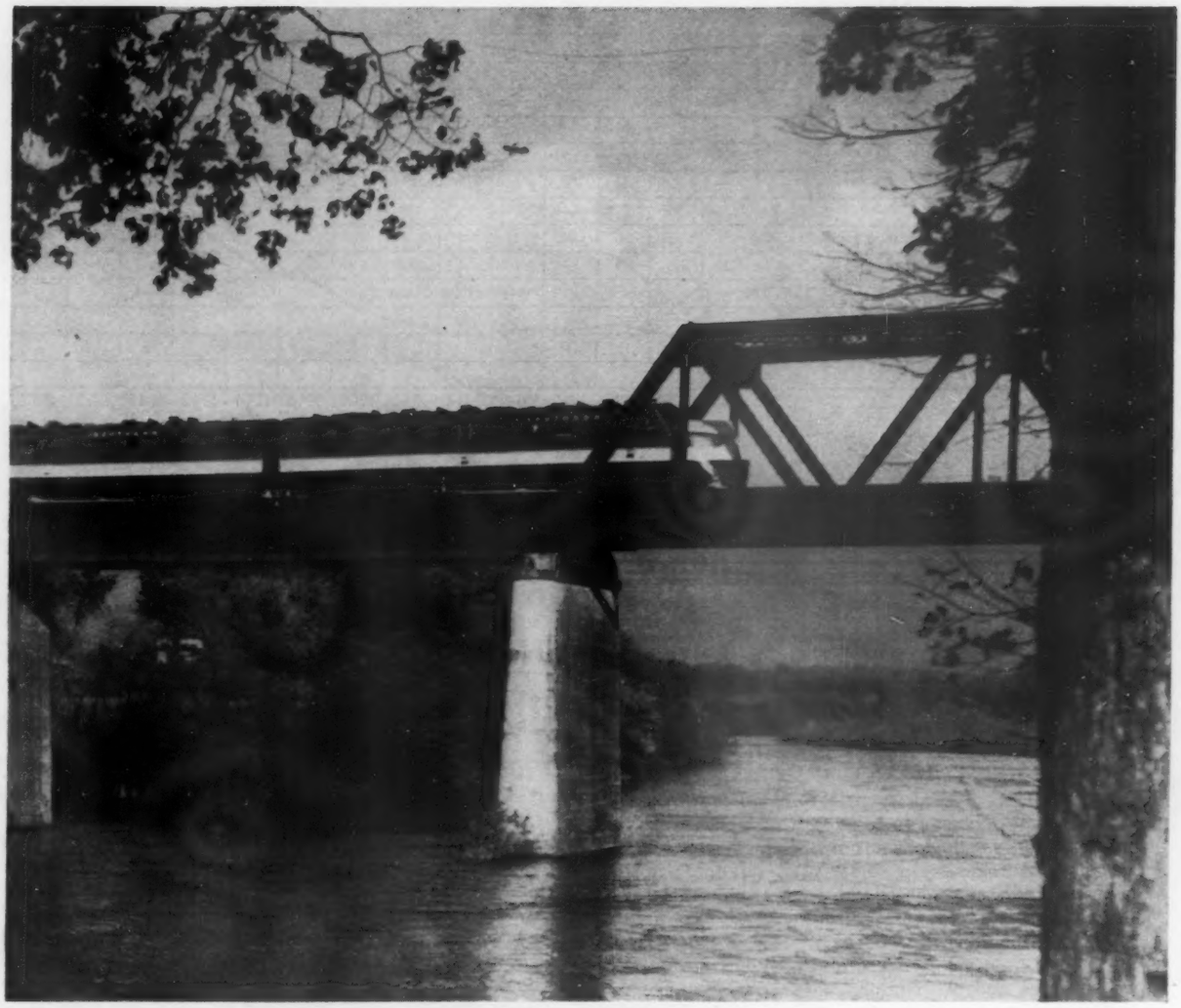
A comprehensive, though not necessarily complete, list of changes in railroad dividend payments in 1950, as compared with 1949, is given in an accompanying table. As that shows, increases were far more numerous than decreases, and much larger in total amount. To point up the overall increase, a hypothetical investor owning one share of each stock issue listed in the table would have received $181.57 in dividends in 1950, against $103.85 in 1949, an increase of $77.72, or 74.8 per cent.

Outstanding among individual dividend performances were the Baltimore & Ohio's payment of $4 per share on its 4 per cent preferred stock, on which only $2 had previously been paid altogether since 1932; the Bangor & Aroostook's first common dividend since 1939; the Chicago, Milwaukee, St. Paul & Pacific's initial post-reorganization dividend on its common stock, and elimination of arrearages on its series A preferred; the Illinois Central's first common stock dividend in 19 years; the Maine Central's resumption of full dividends, and payment of some arrearages, on its 5 per cent cumulative preferred, also after a 19-year lapse; and reduction by the New York, Chicago & St. Louis of back dividends on its preferred stock from $73.50 to $45 per share.

These increased dividends doubtless contributed—along, of course, with many other factors—to the increase in prices of rail securities which took place during the year. *Railway Age's* index of 20 representative railway stocks, which stood at 40.88 on January 3, 1950, was up to 56.07 on January 2, 1951, an increase of 37.2 per cent; the average price of 20 representative railway bonds rose from 90.70 to 98.69 in the same period, an 8.8 per cent increase.

More significant, however, than the movement of railway security prices by themselves, was the fact that rail

Tables accompanying this article were prepared by Edith Stone and Ann Ortlinghaus of the *Railway Age* staff.



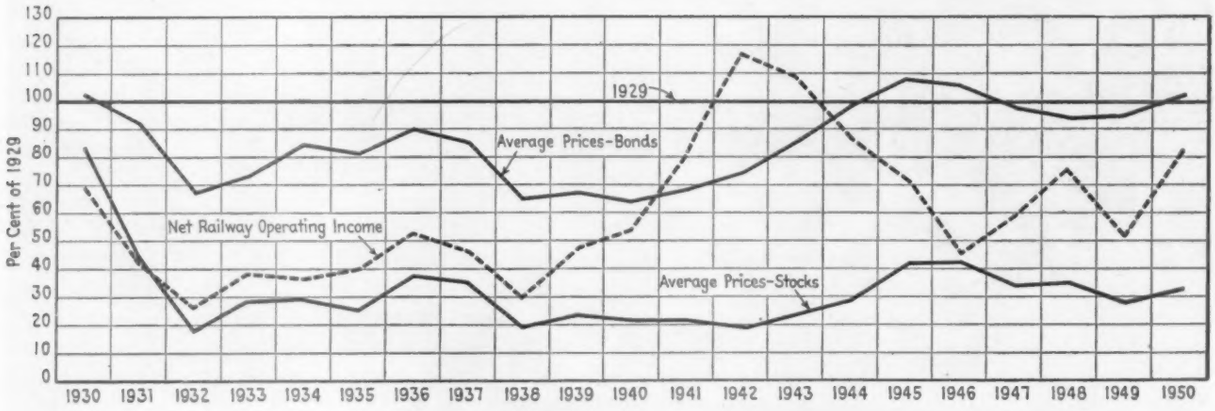
Adequate earnings are essential if the railroads are to maintain and improve their rolling stock and fixed facilities to meet the needs of peacetime commerce and national defense

Capitalization and Investment—Class I, II and III Line-Haul Railways

(Excluding Switching and Terminal Companies)
(*Amounts in thousands of dollars*)

Year	Net capitalization in hands of public			Total property investment cash and materials and supplies	Accrued depreciation and amortization of defense projects	Net property investment
	Capital stock	Funded debt	Total			
1927	$6,756,046	$11,380,645	$18,136,691	$24,589,861	$1,952,176	$22,637,683
1928	7,084,045	11,426,538	18,510,583	24,871,964	2,049,962	22,822,002
1929	7,212,586	11,467,121	18,679,707	26,492,268	2,169,737	24,322,531
1930	7,185,499	11,880,127	19,065,626	26,955,634	2,360,767	24,594,867
1931	7,111,029	11,830,431	18,941,460	26,825,724	2,520,739	24,304,985
1932	7,057,936	11,835,523	18,893,459	26,736,597	2,632,924	24,103,673
1933	7,174,773	11,656,139	18,830,912	26,523,278	2,707,943	23,815,335
1934	7,038,963	11,613,528	18,652,491	26,340,440	2,764,726	23,575,714
1935	7,001,706	11,340,591	18,342,297	26,213,134	2,771,405	23,441,729
1936	7,095,196	11,240,691	18,335,887	26,298,254	2,809,063	23,489,191
1937	7,068,863	11,250,140	18,319,003	26,401,665	2,950,848	23,450,817
1938	7,022,845	10,965,138	17,987,983	26,389,394	3,044,972	23,344,422
1939	6,990,933	10,707,225	17,698,158	26,423,591	3,102,778	23,320,813
1940	7,020,559	10,609,054	17,629,613	26,641,133	3,195,237	23,545,896
1941	7,004,290	10,563,913	17,568,203	26,940,418	3,240,145	23,700,273
1942	6,960,517	10,354,042	17,314,559	27,309,370	3,561,571	23,747,799
1943	6,921,057	9,833,925	16,754,982	27,957,306	3,939,562	24,017,744
1944	6,964,336	9,311,553	16,275,889	28,213,434	4,382,605	23,830,829
1945	7,007,707	8,659,219	15,666,926	28,580,775	5,549,720	23,031,055
1946	7,013,558	8,495,418	15,508,976	28,839,494	5,800,975	23,038,519
1947	7,001,804	8,298,971	15,300,775	29,436,287	6,037,032	23,399,255
1948	6,915,155	8,551,945	15,467,100	30,463,378	6,279,892	24,183,486
1949	6,917,979	8,690,551	15,608,530	31,111,738	6,438,177	24,673,561

Figures from Bureau of Railway Economics, Association of American Railroads, and Interstate Commerce Commission Statistics of Steam Railways.



stocks and bonds showed a greater increase, percentagewise, than securities of either industrial or utility companies.

This is shown by the following table, based on Dow-Jones averages:

Dow-Jones Average	January 3, 1950	December 29, 1950	Per Cent of Change	
20 railroad stocks	52.88	77.64	+46.8	
30 industrial stocks	198.89	235.42	+18.4	
15 utility stocks	41.02	41.04	—	
Total, 65 stocks	71.45	87.21	+22.1	
10 first grade rail bonds	106.57	107.53	+ 0.9	+5.1
10 second grade rail bonds	89.97	98.33	+ 9.3	
10 industrial bonds	103.06	101.69	— 1.3	
10 utility bonds	106.12	103.96	— 2.0	
Total, 40 bonds	101.43	102.88	+ 1.4	

The movement of security prices is, of course, conditioned by many diverse factors; it would be unwise to draw sweeping conclusions from the movement of a single set of averages for a single year. But there is, in the figures above, some basis at least for hope that railroad securities as a class may be on the verge of winning back, relative to industrial and utility securities, at least a little of the public confidence of which unfair governmental policies and shortsighted union policies have so long deprived them.

New Money

As pointed out in the list of new bond issues at the end of this article, the Chicago, Burlington & Quincy and the Southern Pacific obtained between them some $50 million in new money by sale of 3 per cent bonds—convertible debentures in the S.P.'s case. With full recognition of the accepted strength of both companies, "new money" (except for equipment trust certificates) has been so rare in the railroad industry in recent years that their achievement is worth special notice.

Equipment trust certificates continued to find a ready market at acceptable interest rates, although the volume of such certificates sold was down from about $445 million in 1949 to approximately $275 million in 1950. This decline probably reflected in part the smaller volume of new equipment ordered in 1949 or 1950 for 1950 delivery; and in part the financing of considerable new 1950 equipment through such leasing arrangements as the "Equitable Plan," which is described in more detail below. Details of representative equipment trust issues are given in one of the tables.

A number of roads, such as the Atlantic Coast Line, the Delaware, Lackawanna & Western, the Illinois Central, the Pennsylvania, and the Western Maryland overcame problems of sizable near-future bond maturities by refunding operations. Others, notably the Burlington, the Chicago, Rock Island & Pacific, the Peoria & Pekin Union and the Seaboard Air Line, were successful in refunding outstanding issues by sale of new issues carrying substantially lower interest rates. The Rock Island carried through its refinancing plan begun in 1949, and, in so doing, became one of the few large railroads to have all its funded debt, other than equipment trust obligations, concentrated in a single bond issue—of $55 million, with a 2⅞ per cent interest rate.

Reorganizations and Readjustments

A substantial number of roads received approval for, or otherwise made progress on, plans for voluntary reorganizations or capital adjustments. Among these were the Bangor & Aroostook, which modified its outstanding bonds under the Mahaffie Act (Section 20b of the Interstate Commerce Act); the Boston & Maine, which received I.C.C. approval of a Mahaffie Act modification of its outstanding stock to simplify its capital structure and clear up dividend arrearages; and the Boston Terminal Company, which received approval of a Section 77 reorganization.

The commission denied, however, a Mahaffie Act application from the Maine Central, intended to modify its preferred stock so as to eliminate accumulated dividends of $85 per share; and likewise rejected a Mahaffie Act application from the Missouri-Kansas-Texas for authority to fund unpaid interest accumulations on its 5 per cent adjustment mortgage bonds.

Late in the year, the Western Maryland announced plans for recapitalizing, but no official action had been taken on the plan up to the year's end.

The 407-mi. Rutland emerged from a 12½-year receivership-trusteeship on November 1, and the 133-mi. Georgia, Florida & Alabama on December 30. Security holders of the Missouri Pacific were being given an opportunity, as the year ended, to vote on the court approved plan of reorganization for that company. Results were not to be announced until sometime in 1951.

For only the third year on record, no railroads went into receivership or trusteeship. Details of existing receiverships, and of railroads placed in or removed from receivership, by years, are included in tables herewith.

A number of changes in ownership or control, particularly of smaller lines, became effective during the year. Among them were the acquisition of the Cambria & Indiana by the Bethlehem Steel Company; of the Peoria & Bureau Valley by the Rock Island; of the Joliet & Chicago by the Gulf, Mobile & Ohio; of the Illinois Northern by the Atchison, Topeka & Santa Fe, the Burlington, the New York Central and the Pennsylvania; of the Elmira

Representative Equipment Trust Issues Sold in 1950

Road	Maturity	Amount	Int. Rate %	Sold to Bank: Price	Sold to Bank: Cost	Purchaser
Baltimore & Ohio, Ser. BB	1951–1965	$11,865,000	2½	99.646	2.57	Salomon Bros. & Hutzler, et al.
Belt Ry. of Chicago	1950–1962	2,832,000	2¼	99.16	2.40	Kidder, Peabody & Co., and New York Hanseatic Corp.
Central of New Jersey, Ser. A	1951–1965	1,350,000	2½	99.308	2.62	Salomon Bros. & Hutzler
Central of Pennsylvania, Ser. A	1951–1965	1,815,000	2⅝	99.308	2.49	Salomon Bros. & Hutzler
Chesapeake & Ohio	1950–1965	6,750,000	2⅛	99.604	2.18	Salomon Bros. & Hutzler, et al.
	1950–1965	5,070,000	2⅛	99.1727	2.25	Lehman Brothers, et al.
	1951–1965	5,370,000	2⅜	99.3843	2.47	Halsey, Stuart & Co., Inc., et al.
	1951–1965	7,950,000	2½	99.713	2.54	Salomon Bros. & Hutzler, et al.
Chicago & Eastern Illinois, Ser. H	1951–1965	3,270,000	2¾	99.06916	2.90	Halsey, Stuart & Co., Inc., et al.
Chicago & North Western	1951–1965	7,065,000	2¼	99.531	2.33	Halsey, Stuart & Co., Inc., et al.
Chicago, Burlington & Quincy	1950–1965	10,200,000	2⅛	99.6776	2.17	Harriman Ripley & Co., Inc., and Lehman Bros., et al.
Chicago, Mil., St. P. & Pac., Ser. LL	1950–1965	4,650,000	2¼	99.518	2.32	Salomon Bros. & Hutzler, et al.
Ser. MM	1951–1965	5,430,000	2½	99.559	2.57	Salomon Bros. & Hutler, et al.
Chicago, Rock Is. & Pacific, Ser. G	1950–1965	3,630,000	2⅛	99.427	2.21	Salomon Bros. & Hutzler
Ser. H	1951–1962	2,352,000	2⅛	99.47	2.22	First National Bank of Chicago
Chicago, St. P., Minn. & Omaha	1951–1960	915,000	2	99.07	2.20	Harris, Hall & Co., Inc., and Equitable Securities Corp.
Delaware, Lack. & Western, Ser. J	1951–1965	1,995,000	2¾	99.7236	2.43	Lee Higginson Corp., et al.
Denver & Rio Grande Western, Ser. P	1950–1965	2,790,000	2⅝	99.7019	2.42	Halsey, Stuart & Co., Inc., et al.
Erie	1951–1965	6,100,000	2⅝	99.0399	2.52	Salomon Bros. & Hutzler, et al.
Georgia & Florida	1950–1960	950,000	3	100		Reconstruction Finance Corp.
Great Northern	1951–1965	14,130,000	2⅜	99.379	2.47	Halsey, Stuart & Co., Inc., et al.
Gulf, Mobile & Ohio, Ser. F	1951–1964	3,570,000	2⅛	99.657	2.18	Halsey, Stuart & Co., Inc., et al.
Indiana Harbor Belt	1951–1965	1,800,000	2¼	99.069	2.40	Kidder, Peabody & Co., and New York Hanseatic Corp.
International-Great Northern, Ser. DD	1951–1965	900,000	2⅝	99.606	2.45	R. W. Pressprich & Co., et al.
Kansas City Southern, Ser. K	1951–1965	2,700,000	2½	100.5699	2.43	Harris, Hall & Co., Inc., et al.
Maine Central	1951–1960	5,600,000	2½	99.05	2.71	Halsey, Stuart & Co., Inc.
Missouri-Kansas-Texas	1950–1965	1,650,000	2⅛	98.558	2.34	Salomon Bros. & Hutzler, et al.
	1951–1966	5,700,000	2⅞	98.587	3.10	Salomon Bros. & Hutzler, et al.
Missouri Pacific, Ser. NN	1951–1965	3,000,000	2⅜	99.727	2.43	Salomon Bros. & Hutzler, et al.
Ser. OO	1951–1965	4,125,000	2⅜	99.38	2.48	Halsey, Stuart & Co., Inc., et al.
Nashville, Chat. & St. Louis, Ser. F	1951–1965	4,800,000	2¼	99.418	2.35	Salomon Bros. & Hutzler, et al.
New York Central	1951–1965	11,100,000	2¾	99.4177	2.86	Salomon Bros. & Hutzler, et al.
	1951–1965	4,800,000	2¾	99.162	2.90	Salomon Bros. & Hutzler, et al.
New York, Chicago & St. Louis	1951–1965	3,120,000	2½	99.821	2.53	Salomon Bros. & Hutzler, et al.
Pennsylvania, Ser. Y	1951–1965	10,620,000	2¼	99.434	2.35	Halsey, Stuart & Co., Inc., et al.
Ser. Y	1951–1965	10,200,000	2¼	99.0566	2.38	Harriman Ripley & Co., Inc., Lehman Bros., et al.
Ser. Z	1951–1965	10,005,000	2½	99.03	2.67	Halsey, Stuart & Co., Inc., et al.
Ser. Z	1951–1965	10,110,000	2¼	99.006	2.41	Harriman Ripley & Co., Inc., Lehman Bros., et al.
Peoria & Eastern	1951–1965	2,025,000	2⅞	99.1286	3.03	Halsey, Stuart & Co., Inc., et al.
Pittsburgh & Lake Erie	1951–1960	10,000,000	1⅞	99.365	2.01	Halsey, Stuart & Co., Inc., et al.
Reading, Ser. R	1950–1965	3,810,000	2½	99.432	2.21	Salomon Bros. & Hutzler, et al.
Ser. S	1950–1965	5,430,000	2¼	99.16	2.38	Halsey, Stuart & Co., Inc., et al.
St. Louis, Brownsville & Mex., Ser. DD	1951–1965	975,000	2⅜	99.78	2.42	R. W. Pressprich & Co., et al.
St. Louis-San Francisco, Ser. F	1951–1965	2,250,000	2¼	99.079	2.40	Halsey, Stuart & Co., Inc., et al.
Ser. G	1951–1965	3,705,000	2⅝	99.49933	2.46	Mercantile-Commerce Bank & Trust Co., et al.
Seaboard Air Line, Ser. G	1951–1965	7,065,000	2½	99.026	2.28	Halsey, Stuart & Co., Inc.
Ser. H	1951–1965	3,570,000	2⅝	99.205	2.51	Halsey, Stuart & Co., Inc.
Southern Pacific, Ser. DD	1951–1965	13,530,000	2½	99.655	2.19	Salomon Bros. & Hutzler, et al.
Texas & Pacific, Ser. H	1951–1960	2,400,000	1⅞	99.555	1.97	Salomon Bros. & Hutzler, et al.
Wabash, Ser. C	1951–1965	3,315,000	2⅝	98.837	2.56	Salomon Bros. & Hutzler, et al.
Ser. C	1951–1965	5,220,000	2⅛	98.651	2.34	Harris, Hall & Co., Inc., et al.
Western Maryland, Ser. N	1951–1965	2,460,000	2¼	100.1089	2.24	Halsey, Stuart & Co., Inc.
Ser. O	1951–1965	2,040,000	2⅝	99.1513	2.52	Lee Higginson Corp.

Dividend Changes, 1949-1950

	Dividends Paid 1950	Dividends Paid 1949	Increase	Decrease	
Akron, Canton & Youngstown	$4.50	$3.00	$1.50	....	
Atchison, Topeka & Santa Fe	8.50	8.00	.50	....	
Atlanta & West Point	3.00	1.00	2.00	....	
Baltimore & Ohio, 4% Pref.	4.00	1.00	3.00	....	The $1 shown for 1949 was declared in 1949 but paid in 1950, out of 1949 earnings.
Bangor & Aroostook	1.00	....	1.00	....	First since 1939.
Canadian Pacific	1.50	1.25	.25	....	Partly payable in following year out of earnings for year indicated.
Chesapeake & Ohio	1.50	3.00	....	$1.50	
Chicago & N. Western, Common	1.50	....	1.50	....	
Chicago & N. Western, 5% Pref.	5.15	....	5.15	....	15c. applicable to arrears, on basis of 1949 earnings.
Chicago, Burlington & Quincy	7.00	5.00	2.00	....	
Chicago Great Western, 5% Pref.	3.50	.31¼	3.18¾	....	On arrears.
Chicago, Mil., St. P. & P., Common	2.00	....	2.00	....	First since reorganization.
Chicago, Mil., St. P. & P., 5% Pref.	7.00	4.00	3.00	....	Partly applicable to previous years.
Copper Range	.50	....	.50	....	Initial dividend.
Erie	1.75	1.00	.75	....	
Great Northern, 6% Pref.	3.50	4.00	....	.50	
Gulf, Mobile & Ohio	1.50	.50	1.00	....	
Illinois Central	3.00	....	3.00	....	First since 1931.
Intern'l. Rys. of Central Am., 5% Pref.	3.75	2.50	1.25	....	On arrears.
Kansas City Southern	5.00	4.00	1.00	....	
Lake Superior & Ishpeming	1.75	1.25	.50	....	
Maine Central, 5% Pref.	7.50	....	7.50	....	Partly applicable to arrears.
Minneapolis & St. Louis	1.25	1.00	.25	....	
Nashville, Chat. & St. Louis	4.00	2.00	2.00	....	
New York Central	1.00	.50	.50	....	
New York, Chicago & St. Louis, 6% Pref.	34.50	13.50	21.00	....	$28.50 applicable to arrears. Arrearages reduced from $73.50 to $45 per share.
Norfolk & Western	3.50	4.00	....	.50	
Northern Pacific	2.00	1.50	.50	....	Extra of 50¢ payable in 1951.
Pennsylvania	1.00	.75	.25	....	
Pittsburgh & Lake Erie	5.00	4.00	1.00	....	
Pittsburgh & West Virginia	1.50	....	1.50	....	
R. F. & P., Common	3.00	1.75	1.25	....	1949 figures on basis of present stock after adjustment for 4-for-1 split of all classes of stock effective in 1949.
Dividend Obligation	3.00	1.50	1.50	....	
7% Preferred	3.00	1.50	1.50	....	
6% Preferred	3.00	1.50	1.50	....	
St. Louis-San Francisco	1.50	1.00	.50	....	
Savannah & Atlanta	2.00	....	2.00	....	
Seaboard Air Line	3.00	1.50	1.50	....	
Southern	3.00	4.00	....	1.00	
Southern Pacific	5.50	5.00	.50	....	
Tenn., Alabama & Georgia	.60	.50	.10	....	
Texas & Pacific	5.00	4.00	1.00	....	
Wabash	3.00	2.50	.50	....	
Waterloo, Cedar Falls & Northern	.57½	.50	.07½	....	
Western of Alabama	7.50	3.75	3.75	....	
Wheeling & Lake Erie	5.75	7.79¼	....	2.04¼	1950 dividends in accord with terms of lease to N.Y.C. & St. L.

& Williamsport by the P.R.R.; and of the Georgia, Florida & Alabama by the Seaboard Air Line. In most cases, the change of control was only nominal, as many of the acquired companies were already operated under lease by those acquiring them. The I.N., however, was purchased by the four acquiring roads from the International Harvester Company.

On the other hand, the joint Pennsylvania-Wabash application for control of the Detroit, Toledo & Ironton, which had been approved by the I.C.C., was tied up in court; while a commission examiner recommended denial of a Central of Georgia application for control of the Savannah & Atlanta.

At the close of the year, applications were pending before the commission from the Central Vermont for control of its lessor, the New London Northern; from the Great Northern for control of the Pacific Coast; from the Norfolk & Western for control of the Cloverdale & Catawba (since approved); and from the Southern for control of the Richmond & Mecklenburg.

In somewhat similar proceedings, a number of roads sought, and in most cases obtained, authority to simplify their corporate structures and reduce administrative expenses and taxes by absorption of other companies already controlled through lease, by modification of leases, or otherwise. Among companies asking such authority were the Lehigh Valley; the Pennsylvania; the Reading; the St. Louis Southwestern; and the St. Louis-San Francisco.

At least one new company, the Arkansas & Ozarks, was organized, to operate approximately 71 miles of the line abandoned in 1948 by the Missouri & Arkansas.

Early in the year, the Equitable Life Assurance Company announced a new plan for financing purchases of rolling stock, under which that company, in cooperation with a car builder, would purchase equipment and lease it to a railroad for a term of years. As originally conceived, the plan covered only freight cars, Equitable was the only investor involved, and the Pullman-Standard Car Manufacturing Company the only builder. It was subsequently taken up, however, by other institutional investors and by some other builders, including locomotive builders. It was also followed, essentially, in arrangements between the Prudential Insurance Company and the General American-Evans Company, with the former agreeing to finance up to 100,000 of the latter's new "DF" box cars.

The plan avoids the initial down payment customarily required on railroad purchases of equipment, and also is presumed to have certain tax advantages. It was used.

Railroads in the Hands of Receivers or Trustees on December 31, 1950

Road	Mileage operated	Mileage owned	Date of receivership or trusteeship	Long term debt in hands of public	Capital stock in hands of public	Total securities in hands of public	Receiver's or trustee's certificates in hands of public	Principal amount of obligations in default as to principal and/or interest
Boston & Providence	....(a)	64	Aug. 5, 1938	$2,170,000	$3,329,100	$5,499,100	None	$2,170,000
Florida East Coast	571	566	Sept. 1, 1931(b)	58,754,876	37,500,000	96,254,876	None	45,000,000
Georgia & Florida	359	354	Oct. 19, 1929	9,179,919	13,382,441	22,917,081	$600,000	8,253,919
Huntingdon & Broad Top Mountain	69	69	Apr. 18, 1949	2,424,629	3,371,500	5,796,129	None	2,424,629
Long Island	364	351	Mar. 3, 1949	8,253,500	None	8,253,500	None	37,500
Meridian & Bigbee River	50	50	June 15, 1933	500,000	300,000	800,000	1,263,655	500,000
Missouri Pacific	6,969	6,459	Apr. 1, 1933	369,270,370	154,639,600	523,909,970	None	332,697,500
Boonville, St. Louis & Southern	....	0.18	June 1, 1936	6,000	None	6,000	None	6,000
Cairo & Thebes	....	25	Dec. 1, 1937	1,699,000	None	1,699,000	None	1,699,000
Chester & Mount Vernon	....	64	Dec. 1, 1937	None	None	None	None	None
Fort Smith Suburban	....	7	Dec. 1, 1937	None	None	None	None	None
Marion & Eastern	....	3	Dec. 1, 1937	None	None	None	None	None
Missouri Pacific RR Corp. in Nebr.	....	....	May 1, 1933	(Included in Missouri Pacific)				
Natchez & Southern	9	8	Dec. 1, 1937	None	None	None	None	None
New Orleans, Texas & Mexico	196	174	Apr. 1, 1933	40,615,900	859,800	41,475,700	None	None
Asherton & Gulf	32	32	Dec. 1, 1937	None	None	None	None	None
Asphalt Belt	18	18	Dec. 1, 1937	None	None	None	None	None
Beaumont, Sour Lake & Western	146	84	May 1, 1933	None	None	None	None	None
Houston North Shore	....	27	May 1, 1933	None	None	None	None	None
Houston & Brazos Valley	37	37	Dec. 1, 1937	None	None	None	None	None
International-Great Northern	1,110	1,056	Apr. 1, 1933	52,669,612	None	52,669,612	None	44,927,700
Austin Dam & Southern	....	2(c)	Dec. 1, 1937	None	None	None	None	None
New Iberia & Northern	95	61	Dec. 1, 1937	None	None	None	None	None
Iberia, St. Mary & Eastern	....	34	Dec. 1, 1937	None	None	None	None	None
Orange & Northwestern	62	62	Dec. 1, 1937	None	None	None	None	None
Rio Grande City	21	18	Dec. 1, 1937	None	None	None	None	None
St. Louis, Brownsville & Mexico	590	560	May 1, 1933	7,596,221	None	7,596,221	None	None
San Antonio Southern	45	29	Dec. 1, 1937	None	None	None	None	None
San Antonio, Uvalde & Gulf	317	314	May 1, 1933	None	None	None	None	None
San Benito & Rio Grande Valley	115	115	Dec. 1, 1937	None	None	None	None	None
Sugar Land	42	19	Dec. 1, 1937	None	None	None	None	None
New Jersey & New York	38	28	June 30, 1938	1,022,960	366,400	1,389,360	None	1,022,960
New York, Ontario & Western	544	340	May 20, 1937	38,945,915	58,114,043	97,059,958	None	35,547,915
Ellenville & Kingston	....	28	Nov. 4, 1948	None	None	None	None	None
Ontario, Carbondale & Scranton	....	68	Nov. 4, 1948	None	None	None	None	None
Port Jervis, Monticello & Summitville	....	38	Nov. 4, 1948	None	None	None	None	None
New York, Susquehanna & Western	120	120	June 1, 1937	12,769,173	None	12,769,173	None	12,545,608
Rio Grande Southern	172	172	Dec. 16, 1929	2,728,000	934,700	3,662,700	60,000	2,728,000
Smoky Mountain	31	29	Mar. 20, 1947(d)	None	75,000	75,000	None	None
Tallulah Falls	57	57	June 23, 1923	43,420	None	43,420	None	None
Waco, Beaumont, Trinity & Sabine	18	18	Feb. 8, 1930	330,000	1,113,000	1,443,000	None	None
Wisconsin Central	....(e)	906	Dec. 2, 1932(f)	41,417,941	17,032,700	58,450,641	None	38,081,000
Wyoming	29	29	Feb. 28, 1948(g)	None	None	None	None	None

(a) Operated by the New York, New Haven & Hartford.
(b) Changed to trusteeship April 21, 1941.
(c) Yard switching tracks.
(d) Changed to receivership July 16, 1948.
(e) Operated by Minneapolis, St. Paul & Sault Ste. Marie.
(f) Changed to trusteeship Oct. 1, 1944.
(g) Changed to trusteeship July 9, 1948.

Note:—The effort has been made, in the above table, to list only those securities of bankrupt carriers which are actually in the hands of the investing public—and to exclude securities of one carrier held by an affiliated carrier. Where securities are held by other railways not affiliated with the issuing company, however, they are included in the above list as publicly held. Owing to the complexities of some corporate structures, the decision as to the fact of public or other-carrier ownership has perforce, in some instances, been arbitrary. The purpose has been to give a general picture of the public stake in bankrupt carriers rather than a comprehensive tabulation of legal obligations.

during 1950, by some 10 railroads in acquiring approximately 19,850 freight cars and about 195 diesel locomotive units, valued at a total of some $126,800,000. It was not heavily used, however, during the final quarter of the year, and there now appears to be some question as to whether it will be followed to any great extent in future.

A somewhat similar plan was subsequently worked out by the General Railway Signal Company for financing signal installations; under it, the cost of work, above a 20 per cent down payment, is financed by an institutional investor, to which the railroad pays the 80 per cent balance, with interest, in installments spread over five years. The first application of this plan was in connection with three signaling projects, costing nearly $1 million, on the New York Central.

Capitalization, Investment, New Securities

As shown by the table on page 173, total railroad capitalization at the beginning of 1950 had increased for the second year in succession, mainly because of the volume of railroad equipment trust certificates sold during 1949. Net property investment, after depreciation, however, continued its upward trend, increasing more than capitalization. At the beginning of 1950, therefore, railroad investors once again found themselves with greater equity behind their securities, just as they have in each year for almost two decades. With 1950 capital expenditures topping $1 billion, and with new equipment trusts issued in somewhat smaller volume in 1950 than in 1949, this trend of increasing railroad property values in relation to capitalization has undoubtedly continued to the beginning of 1951.

In mid-December, as reported in the issue of December 16, the New York, Chicago & St. Louis took the rare step of applying for authority to sell 33,770 shares of new common stock to present owners of that stock, at the rate of one new share for each 10 shares held. As reported elsewhere in this issue, the price of that new stock has recently been tentatively set at $150 per share—1½ times its $100 par value. This is the first important attempt at common stock financing by any large railroad in at least 14 years.

Exclusive of equipment trust certificates, new issues of railroad securities during 1950 included these:

In May, the **Atlantic Coast Line** was authorized to issue $50,724,000 of series A general mortgage bonds, maturing March 1, 1980, for exchange for the same amount of first consolidated mortgage 4 per cent bonds due July 1, 1952. The new bonds bear interest at 4½ per cent to September 1, 1952, and at 4 per cent from that date to their maturity.

The **Chicago, Burlington & Quincy,** in April, was authorized to sell $25,000,000 of first and refunding mortgage 3 per cent bonds, due February 1, 1990. This was a dual purpose issue. Part of the proceeds were intended for redemption or purchase of $12,460,000 of series B first and refunding mortgage 4½ per cent bonds, due February 1, 1977, but callable February 1, 1952, at 105; the balance was intended to reimburse the company for capital expenditures on its "centennial cut off" in Missouri. The

Summary of Railroad Receiverships and Trusteeships, 1876 to 1950

	Roads Placed in Receivership or Trusteeship		Roads Taken from Receivership or Trusteeship*	
Year	No. of roads	Miles	No. of roads	Miles
1876	42	6,662	30	3,840
1877	38	3,637	54	3,875
1878	27	2,320	48	3,906
1879	12	1,102	65	4,909
1880	13	885	31	3,775
1881	5	110	29	2,617
1882	12	912	16	867
1883	11	1,990	18	1,354
1884	37	11,038	15	710
1885	44	8,836	22	3,156
1886	13	1,799	45	7,687
1887	9	1,046	31	5,478
1888	22	3,270	19	1,596
1889	22	3,803	25	2,930
1890	26	2,963	29	3,825
1891	26	2,159	21	3,223
1892	36	10,508	28	1,922
1893	74	29,340	25	1,613
1894	38	7,025	42	5,643
1895	31	4,089	52	12,831
1896	34	5,441	58	13,730
1897	18	1,537	42	6,675
1898	18	2,069	47	6,054
1899	10	1,019	32	4,294
1900	16	1,165	24	3,477
1901	4	73	17	1,139
1902	5	278	20	693
1903	9	229	13	555
1904	8	744	13	524
1905	10	3,593	6	679
1906	6	204	8	262
1907	7	317	6	114
1908	24	8,009	3	138
1909	5	859	12	2,629
1910	7	735	17	1,100
1911	5	2,606	13	1,386
1912	13	3,784	12	661
1913	17	9,020	6	1,159
1914	22	4,222	9	1,470
1915	12	20,143	11	3,914
1916	9	4,439	26	8,355
1917	19	2,486	20	10,963
1918	8	3,519	11	763
1919	7	244	8	459
1920	10	541	7	380
1921	14	1,744	11	4,173
1922	12	4,330	15	6,151
1923	10	2,218	8	637
1924	11	920	14	3,992
1925	6	11,368	6	638
1926	6	88	12	12,852
1927	6	924	5	142
1928	1	19	4	209
1929	3	634	5	562
1930	4	4,752	2	1,048
1931	19	5,195	2	102
1932	13	11,817	8	394
1933	18	21,222	2	298
1934	1	81	2	40
1935	16	29,018	5	436
1936	4	8	3	122
1937	23	1,937	2	179
1938	9	6,194	8	290
1939	3	733	4	401
1940	..	....	6	3,675
1941	1	25	9	5,031
1942	4	961	7	2,230
1943	3	23	6	394
1944	1	....	8	13,096
1945	1	96	5	10,833
1946	..	....	7	4,832
1947	2	396	14	11,535
1948	4	29	11	9,473
1949	2	445	3	970
1950	..	....	2	407

*Prior to 1938 these figures covered foreclosure sales only.

Mileage in the Hands of Receivers or Trustees

(Figures to 1949, inclusive, from I. C. C. Statistics for Year Ended December 31, 1949. Figures for 1950 compiled by *Railway Age*)

Year ended	Miles of road operated by receivers or trustees at close of year	Net change during year in miles of road operated	No. of roads in charge of receivers or trustees at close of year
June 30, 1894	40,819	.....	192
1895	37,856	— 2,963	169
1896	30,475	— 7,381	151
1897	18,862	—11,613	128
1898	12,745	— 6,117	94
1899	9,853	— 2,892	71
1900	4,178	— 5,675	52
1901	2,497	— 1,681	45
1902	1,475	— 1,022	27
1903	1,185	— 290	27
1904	1,323	+ 138	28
1905	796	— 527	26
1906	3,971	+ 3,175	34
1907	3,926	— 45	29
1908	9,529	+ 5,603	52
1909	10,530	+ 1,001	44
1910	5,257	— 5,273	39
1911	4,593	— 664	39
1912	9,786	+ 5,193	44
1913	16,286	+ 6,500	49
1914	18,608	+ 2,322	68
1915	30,223	+11,615	85
1916	37,353	+ 7,130	94
Dec. 31, 1916	34,804	— 2,549*	80
1917	17,376	—17,428	82
1918	19,208	+ 1,832	74
1919	16,590	— 2,618	65
1920	16,290	— 300	61
1921	13,512	— 2,778	68
1922	15,259	+ 1,747	64
1923	12,623	— 2,636	64
1924	8,105	— 4,518	61
1925	18,687	+10,582	53
1926	17,632	— 1,055	45
1927	16,752	— 880	40
1928	5,256	—11,496	33
1929	5,703	+ 447	29
1930	9,486	+ 3,783	30
1931	12,970	+ 3,484	45
1932	22,545	+ 9,575	55
1933	41,698	+19,153	78
1934	42,168	+ 470	80
1935	68,345	+26,177	87
1936	69,712	+ 1,367	91
1937	70,884	+ 1,172	109
1938	76,938	+ 6,054	109
1939	77,013	+ 75	108
1940	75,270	— 1,743	103
1941	69,859	— 5,411	91
1942	66,904	— 2,955	87
1943	64,758	— 2,146	82
1944	50,497	—14,261	76
1945	39,714	—10,783	72
1946	34,389	— 5,325	65
1947	22,750	—11,639	52
1948	13,283	— 9,467	46
1949	12,679	— 604	44
1950	12,226	— 453	43

*Represents decrease for six months.
Minor discrepancies between figures in this and other tables, and text, are due to slight variations in methods of reporting.

new 3 per cent bonds were sold at par through Morgan Stanley & Co. and 19 associates, who bid 99.53, making the average annual cost of the proceeds approximately 3.02 per cent.

The **Chicago, Rock Island & Pacific** was authorized, in February, to take the final step in its plan for refinancing all its mortgage indebtedness, by selling $55,000,000 of new series A first mortgage bonds, dated January 1, 1950, and maturing on the same date in 1980. Proceeds of the issue were intended for redemption of $33,644,400 of the road's series A general mortgage 4½ per cent convertible income bonds, due January 1, 2019, and $25,760,000 of short term promissory notes to various banks. These notes had been issued as a preliminary step in the refinancing plan, their proceeds having been used to redeem, on January 1, 1950, an equal principal amount of the road's series A first mortgage 4 per cent bonds. (See *Railway Age* of January 7, 1950, page 224.) The new series A bonds of 1980 were sold through Halsey, Stuart & Co. and 82 associates on a bid of 98.81 with a 2⅞ per cent interest rate, making the average annual cost to the Rock Island approximately 2.93 per cent.

The **Delaware, Lackawanna & Western** received May authority to assume liability for $19,356,000 of new securities to be used in refunding an equal amount of Morris & Essex construction mortgage gold bonds due May 1, 1955, and including $8,394,000 of series A 5 per cent bonds and $10,962,000 of series B 4½ per cent bonds. The new securities issued in exchange for the M. & E. bonds included $5,036,400 of Pennsylvania division series A refunding mortgage and collateral trust bonds, with interest at 5 per cent; $6,577,200 of like bonds, series B, with interest at 4½ per cent; and $7,742,400 of Pennsylvania division first mortgage 4¾ per cent bonds. The two issues of refunding mortgage bonds were exchanged for the M. & E. bonds of corresponding interest rates on the basis of $600 of new bonds for $1,000 of M. & E. bonds. The new 4¾ per cent bonds were sold for cash to the Metropolitan Life Insurance Company, and the proceeds used to complete the exchange with $400 in cash for each $1,000 of M. & E. bonds. The new first mortgage bonds mature May 1, 1980; the refunding mortgage bonds May 1, 1985.

In July, the **Minneapolis & St. Louis** received authority to issue to the Commercial National Bank & Trust Co. of New York up to $1,000,000 of short term 2¼ per cent promissory notes, proceeds of which were to be used in construction of its new general office building at Minneapolis, Minn. (See *Railway Age* of May 13, 1950, page 67.) On or before March 31, 1951, the short term notes are to be retired by issuance to the John Hancock Mutual Life Insurance Company of a 4 per cent mortgage note for $1,000,000, to be dated on or before February 23, 1951, and to be payable in monthly installments for 18¼ years. The long term note will be secured by a first mortgage on the completed building.

In the same month, the **Pennsylvania** was authorized to issue and sell to its subsidiary, the Pennsylvania Company, up to $60,000,000 of series H general mortgage 4¼ per cent bonds. The bonds, dated April 1, 1950, and maturing April 1, 1986, were to be used to reimburse the P.R.R. treasury in part for past expenditures, and to meet April 1, 1952, maturity of 15-year convertible debenture 3¼ per cent bonds outstanding, as of July 1, in the amount of $52,667,800. The Pennsylvania Company, in turn, was authorized to finance purchase of the railroad bonds by sale of an equivalent amount of its own bonds, to mature in equal annual installments of $2,400,000 each, beginning May 1, 1951. The only bid for this issue was from Kuhn, Loeb & Co. and 50 associates, at 99, with interest rates ranging from 2.5 per cent for the 1951-1955 maturities to 4.5 per cent for the 1974-1975 maturities, and averaging 3.87 per cent. On this basis, the average annual cost of the proceeds to the Pennsylvania Company would be approximately 3.99 per cent. In August, the I.C.C.'s Division 4 approved application of approximately one-quarter of the proceeds of these bonds to purchase the stock of the Detroit, Toledo & Ironton, of which the P.R.R. and the Wabash had previously been authorized to obtain joint control, under an order which, due to court action, has not yet been made effective.

In January, the **Peoria & Pekin Union** was enabled to obtain a lower interest rate on its first mortgage indebtedness by selling $2,500,000 of an authorized issue of $3,000,000 of series A first mortgage 3⅛ per cent bonds, due February 1, 1975. Proceeds of the sale permitted the road to call for redemption a like amount of series A first mortgage 5½ per cent bonds, due August 1, 1974, but callable February 1, 1950, at 104-1/6 plus accrued interest from August 1, 1949. The new bonds were sold at par through Halsey, Stuart & Co., which bid 98.5467, making the average annual cost to the railroad approximately 3.21 per cent.

The **Seaboard Air Line**, in June, was authorized to sell $30,000,000 of series B first mortgage 3 per cent bonds, proceeds from which were used, with treasury cash, to redeem $31,534,500 of series A first mortgage 4 per cent bonds. The new bonds mature May 1, 1980. Halsey, Stuart & Co., with 58 associates, was successful bidder for the issue, at 98.5799, making the average annual cost to the S.A.L. approximately 3.07 per cent.

In what would probably be considered the year's outstanding railroad financing operation, the **Southern Pacific**, in March, obtained authority to issue not more than $37,727,600 of convertible debenture 3 per cent bonds, due April 1, 1960, and 754,552 shares of common stock. The bonds were offered to stockholders of record as of March 10, at par, at the rate of $10 for each share of stock held; the balance were sold to Blyth & Co. and Salomon Bros. & Hutzler at par, but with a specified underwriting fee which made the equivalent sale price 98.05. Proceeds from sale of the bonds were to reimburse the road for redeeming a "secured bond" issue in 1946 and to provide cash for its 1950 improvement program. The stock, which is to be issued only as required for conversion of the bonds, is part of 2,171,754 shares authorized but unissued. Conversion will be on the basis of two shares of stock for each $100 of debentures, with cash or scrip adjustments to the prevailing conversion price; conversion value, subject to adjustment, was set at $55 per share.

The **Western Maryland**, in January, was authorized to issue $46,177,000 of general mortgage bonds, due October 1, 1969, and bearing interest at 4½ per cent to October 1, 1952, and 4 per cent after that date. Of the new bonds, $44,177,000 were to be exchanged for a like principal amount of non-callable first mortgage bonds due October 1, 1952; and $2,000,000 were to be sold at 100.65 and accrued interest to finance in part redemption of $5,234,000 of collateral trust bonds and $1,275,000 of first mortgage bonds of the Greenbrier, Cheat & Elk, a W.M. subsidiary, which, with other W.M. subsidiaries, was to be dissolved and merged with the W.M. to simplify the latter's corporate structure.

The **Western Pacific**, late in December, sold a new issue of $22,000,000 of first mortgage bonds, maturing in 1981. The new bonds, which carry a 3⅛ per cent interest rate, will be used to redeem $10,000,000 of first mortgage 4 per cent bonds and $6,113,300 of general mortgage 4½ per cent bonds, with the balance being used to replenish the W.P. treasury for capital expenditures and to provide for additional capital outlays. The bonds were sold through the Union Securities Corporation and Glore, Forgan & Co. and 22 associates at 99.64, and were reoffered to the public at 100.485, to yield approximately 3.1 per cent.

New Issues of Railroad Securities Offered for Sale in the United States, 1934-1950†

(Amounts in thousands of dollars)

Year	Bonds	Stock	Railroad total	Total all industries	Railroad as per cent of total
1934	$176,423	....	$176,423	$ 397,240	44.4
1935	126,031	....	126,031	2,331,630	5.4
1936	793,618	$3,838	797,456	4,571,670	17.4
1937	344,257	....	344,257	2,309,524	14.9
1938	54,873	....	54,873	2,154,664	2.5
1939	185,474	233	185,707	2,164,007	8.6
1940	323,912	....	323,912	2,677,173	12.1
1941	366,313	....	366,313	2,666,887	13.7
1942	47,726	....	47,726	1,062,288	4.5
1943	161,179	....	161,179	1,169,692	13.8
1944	609,010	350	609,360	3,201,891	19.0
1945	1,453,517	504	1,454,021	6,010,985	24.2
1946	711,119	....	711,119	6,899,646	10.3
1947	285,680	....	285,680	6,576,824	4.3
1948	623,348	....	623,348	7,077,820	8.8
1949	459,982	....	459,982	6,051,550	7.6
1950*	481,399	....	481,399	5,305,234	9.1

*10 months total.
†Compiled by Securities and Exchange Commission.

Future Outlook

It seems to be generally expected that the level of traffic will remain high for at least the next few years. Barring excessive increases in material prices or in wage rates, or disastrous changes in working rules, the railroads should continue to show the same ability to control costs that they displayed throughout 1950. That should mean comparatively high net earnings, which, it now appears, are likely to be less affected by excess profits taxes than the earnings of many other industries.

Since competition is likely to have relatively less bearing on the financial situation as traffic volume increases—and particularly as available manpower decreases—labor difficulties are the most ominous cloud on the horizon. If present union demands can be settled on any satisfactory basis—and if the further demands which past history indicates will inevitably follow close upon settlement of present demands can be similarly settled—without giving the railroads to the unions—then it appears reasonable to anticipate still further improvement in the industry's financial picture in 1951.

CALENDAR OF LABOR AND WAGE EVENTS—1950

(At the beginning of the year, the railroads had before them proposals of all the train service organizations, except the Brotherhood of Locomotive Engineers, for a 40-hour week for yardmen, and for other rate and rule changes.)

Jan. 6 Brotherhood of Locomotive Engineers serves notice of desire to change working agreements in ways which would result in wage increases for members employed in road and yard services.

Jan. 16 National Mediation Board begins talks on conductors' and trainmen's demands for 40-hr. week and rule changes. On Feb. 14 N.M.B. announces inability to settle dispute, resulting in the creation of an emergency board on Feb. 24.

Feb. 4 President Truman appoints emergency board to investigate a dispute between Brotherhood of Railroad Trainmen and Denver & Rio Grande Western over accumulated grievances. On Mar. 4 board reports it is "driven to the conclusion that the union seeks to retain the benefits of the Railway Labor Act and is unwilling to accept its obligations or remedies."

Apr. 4 Delaware, Lackawanna & Western signs agreement with Switchmen's Union of North America for 40-hr. week.

Apr. 5 Canadian union representatives reject compromise proposals for settlement of wage-hour dispute with Canadian railroads. A week later unions start taking a strike vote.

Apr. 10 Order of Railway Conductors sets April 17 as strike date for Pullman conductors in dispute over complete revision of working agreements, resulting in appointment of emergency board.

Apr. 19 Brotherhood of Locomotive Firemen & Enginemen sets April 26 for strike on Pennsylvania lines west of Harrisburg; New York Central lines west of Buffalo; Atchison, Topeka & Santa Fe; and the Southern. At request of N.M.B. strike is later postponed two weeks.

Apr. 19 Emergency board, whose members are handling similar disputes for the O.R.C. and B.R.T., finds S.U.N.A. refuses to submit evidence at hearings concerning dispute over wages and hours and recommends S.U.N.A. be given the same treatment as O.R.C.-B.R.T.

Apr. 27 National mediation proceedings with B. of L.F. & E. begin over second fireman on diesels, the cause of a threatened—but postponed—strike.

May 2 Railway Yardmasters of America objects to emergency board procedures and calls a strike for 7 western cities. Strike called off with agreement to have O.R.C.-B.R.T. board handle case.

May 10 Strike of B. of L.F. & E. firemen against P. R. R., N.Y.C., Sou., and A.T.&S.F. begins at 6 a.m. in spite of mediation efforts and in defiance of Railway Labor Act. Strike ends six days later, with the withdrawal of union demand for extra fireman on diesels, and with an agreement to investigate and arbitrate remaining issues.

May 17 S.U.N.A. refuses to agree to extension of time for presidential fact-finding board and sets strike date of May 23 against 10 western roads.

May 14 Maintenance-of-way employees ask railroads to restore "normal" maintenance by rehiring workers dropped as a result of the 40-hr. week, and for stabilization of employment.

May 24 Four operating brotherhoods call strike against N.Y.C. over 290 grievances, resulting in creation of emergency board. Board later comments on this case as an example of the growing practice of flouting legal procedure by creating emergencies in the hope of winning favorable rewards.

May 27 S.U.N.A. reaches understanding with mediation board and railroads, and cancels June 1 strike against 10 western roads.

June 6 Emergency board appointed to investigate dispute between Boston & Albany and B.R.T. over assignment of a flagman to single-unit diesel rail cars. On July 17 board recommends B.R.T. either handle dispute under regular procedures as a grievance, or by giving notice of an intended change in agreement. Board notes that case "contains many far-reaching implications."

June 15 Emergency boards investigating disputes of yard service employees represented by S.U.N.A., R.Y. of A., B.R.T. and O.R.C. recommend 40-hr. week and 18-cent hourly raise effective October 1.

June 17 Railway Labor Executives Association announces decision to suspend all cooperation with railroad management on all problems of mutual interest.

June 20 O.R.C. and B.R.T. reject findings of emergency board in case of wages and hours for yard employees.

June 21 S.U.N.A. rejects recommendations of fact-finding board and 4 days later strikes against 5 western roads, completely halting all service on Chicago, Rock Island & Pacific, Western Pacific, Denver & Rio Grande Western, and Chicago Great Western; Great Northern continues limited service using supervisory personnel.

June 24 R.Y. of A. rejects recommendations of fact-finding board and resumes negotiations with railroads.

July 6 As a result of governmental pressure, S.U.N.A. calls off strike against all roads except Rock Island. Two days later, Army takes over Rock Island and obtains temporary injunction ending strike.

Aug. 1 Settlement proposed by Dominion government for dispute between Canadian roads and "non-ops" accepted by roads but rejected by unions, who call strike for Aug. 22.

Aug. 9 O.R.C. and B.R.T. wire President Truman suggesting government take over all roads because "it is the only action which will cause the carriers to proceed to mediate settlement with us in good faith."

Aug. 11 Emergency board created to investigate dispute between 26 short line railroads and 16 non-operating organizations over demand for a 40-hr. week with 48 hours pay. On Sept. 13, board recommends 40-hr. week with 7-cent hourly wage increase.

Aug. 15 O.R.C. and B.R.T. withdraw from conferences; renew request for governmental seizure of railroads; and threaten nationwide strike.

Aug. 22 Some 125,000 non-operating employees strike on Canadian National and Canadian Pacific, virtually paralyzing Dominion rail service and rail-operated telegraph and hotel services.

Aug. 23 O.R.C. and B.R.T. call nationwide strike for Aug. 28.

Aug. 27 Government seizes railroads to prevent nationwide strike.

Aug. 30 Canadian Parliament passes special act requiring railroad employees to return to work under 48-hr. week with interim wage increase of 4 cents an hour. Issues under dispute to be negotiated within 30 days. Those remaining unsettled at the end of that time to be handled by a specially appointed governmental mediator whose findings would then be binding on both the railroads and the unions. Men return to work and railroads resume operations following day.

Sept. 1 Dispute between S.U.N.A. and 10 western roads settled on the basis of a 23 cents-an-hour wage boost and acceptance of the 40-hr. week in principle, but deferred in application for at least one year. The agreements also provide for quarterly adjustments for changes in the cost of living after Jan. 1, 1951.

Sept. 6 N.M.B. resumes talks with O.R.C.-B.R.T. and railroads.

Sept. 30 R.Y. of A. signs 40-hr. week contracts on S.U.N.A. basis.

Oct. 1 Arbitrator appointed in Canadian wage-hour dispute.

Oct. 12 B. of L.F. & E. serves demand for 35-cent hourly wage increase for road men. Fifteen unions representing "non-ops" plan to seek 25-cent hourly increase.

Oct. 20 B. of L.E. decides to seek 20 per cent pay increase.

Oct. 24 B. of L.E. breaks off negotiations on its January 6 demands, refusing to accept railroad offers.

Oct. 24 O.R.C. and B.R.T. reported planning to seek 35-cent hourly increase "across the board."

Nov. 7 Emergency board recommends reduction in Pullman conductors' work month from 225 to 210 hours, with no increase in monthly rates. Board recommends O.R.C. withdraw most of the other 68 demands involved.

Nov. 25 American Train Dispatchers Association serves notice requesting $50 monthly wage increase and improvements in working conditions.

Dec. 7 O.R.C. seeks $90 a month wage increase for Pullman conductors.

Dec. 13 "Sickness" overtakes B.R.T. switchmen and trainmen in Chicago, St. Louis, Washington and other cities in 3-day "spontaneous" "unauthorized" work stoppage. Parcel post and Railway Express shipments through struck terminals embargoed. Strike continues in face of three federal injunctions but men "recover" when government initiates contempt proceedings.

Dec. 21 O.R.C., B.R.T., B. of L.E. and B. of L.F. & E. representatives sign "memorandum of agreement" in year-long dispute involving operating and yard employees. Agreement grants 23 cents an hour increase to yardmen and 5 cents an hour increase to roadmen, retroactive to Oct. 1. Commencing Jan. 1, 1951, yardmen would receive an additional 2 cents an hour, and roadmen an additional 5 cents an hour. The 40-hour week is accepted in principle, but application is deferred for at least one year. The agreement includes a cost-of-living escalator clause to become effective April 1, 1951. If and when the 40-hour week is inaugurated, yardmen will receive an additional 4 cents an hour. Besides other wage and rule agreements, the "memorandum" calls for a reduction in the work month of dining car stewards from 225 to 205 hours, with no penalty overtime accruing until after 240 hours have been worked. Commencing Jan. 1, 1951, stewards' monthly pay rate is increased by $4.10, and commencing Feb. 1, 1951, overtime penalty rates will start after 220 hours.

Dec. 27 General chairmen of B. & L.E. reject "memorandum of agreement."

Dec. 30 Congress passes and sends to the White House a bill permitting railroad unions to negotiate for a "closed shop" and for "check-off" of union dues.

(Shortly after the end of the year, all four operating unions had decided to refuse to accept the "memorandum of agreement" negotiated in Washington, December 21. The reluctance of these four operating unions to accept any railroad offers, or any of the proposals advanced by the National Mediation Board and the various emergency boards, led to federal seizure of all railroads by the Army on August 27. Government control was still in effect at the end of the year. The close of the year found the railroads confronted with new demands from the 15 non-operating unions and from the A.T.D.A. for further wage increases.)

During World War II the Southern Pacific resorted to used containers from its commissary department for storage of oil and other supplies. These days may come again

RAILWAY PURCHASES in 1950 Hit New Dollar Peak . . .

Large equipment orders carried figures to new high level—Other buying was slightly above 1949 figures as many prices increased

By J. W. MILLIKEN
Associate Editor

With equipment orders hitting an all-time high in dollar figures, while other purchases were increasing only slightly from 1949, buying of materials, supplies and fuel, plus orders for new equipment, by Class I railroads hit a new peak in 1950 of $2,952 million. Prices, to be sure, had a not inconsiderable part to play in this increase, for they increased almost ten per cent from January, 1950, to December. Nevertheless, from August on until the end of the year railroad materials and supplies were being purchased on an increasingly large scale. Because of the shortages, particularly of steel, which developed after mid-year, as 1950 came to a close more than one purchasing agent was cursing the circumstances—declining revenues, particularly—which had forced him to cut his inventories so sharply in the year and more preceding Korea.

Purchases of crossties were considerably below those of recent years, declining 31 per cent from the total for 1949. Rail buying, while not hit so hard, still suffered a considerable decline, due only in a slight measure to unavailability. Purchases of miscellaneous material and fuel in 1950 were up somewhat from 1949, with increased prices in 1950 partly responsible for bringing the figures for last year above the 1949 totals.

That railroad purchases in 1951 will increase substantially over 1950 it is almost superfluous to state. In dollar volume it seems very likely that railroad purchases (not considering equipment orders) will be the largest in the history of the industry. Price increases alone will raise the dollar volume to new heights, even if by some accident purchases should not be any larger in physical volume. Most railroad purchasing agents indicate that from January 1 of last year until November the price

1950 RAILWAY PURCHASES**

	Oct. '50 (000)	Nov. '50 (000)	Dec. '50 (000)	Cumulative total, 1950 (000)
Equipment*	$159,255	$90,930	$50,030	$1,215,029
Rail	8,833	8,000	7,500	98,928
Crossties	5,023	4,300	4,100	56,292
All other material	98,347	93,000	98,400	977,066
Total from manufacturers	$271,458	$196,230	$160,030	$2,347,315
Fuel	59,747	54,000	58,000	604,547
Grand total	$331,205	$250,230	$218,030	$2,951,862

*Amount placed on order
**Subject to revision

index of railroad materials had climbed almost 10 per cent. This was without taking into account the steel price rise which came about December 1. With so many items being in short supply and competitive bidding from many consumers going on to procure these materials it could be that the physical volume of some items procured will be less than in 1950. Overall, however, there doubtless will be a large increase in the physical volume of material and equipment purchases, unless total war completely interrupts production.

Lead times on many items already have jumped to as long as 240 days. Many of these supplies, of course, are affected by the shortages of steel and copper. Steel, of course, is already in particularly short supply, and probably will continue to be so despite the voluntary allocations being made by the steel industry and the intervention of government agencies. It is considered doubtful if freight car building will get into full stride until March. With that in mind, the railroads are continuing their programs of reclamation. Some already have stepped up activity along these lines, while others uneasily recognize that more along this line will have to be done. This step-up not only includes increased conservation of items already being reclaimed, but it is going to include some new items. As one railroad has advised *Railway Age*, "We should go back into this activity as far as possible." (The railroad quoted had an extensive reclamation program during the last war and for several years thereafter.) Another line, not sure just how well the steel allocation program will work out, has examined its scrap sorting operations closely and has found considerable quantities of material which it has set aside for possible reclamation if amounts of steel obtained under the voluntary allocation program do not come up to needs. Canadian roads, like their U. S. counterparts, also are being forced to intensify their reclamation operations because in Canada "scare buying" has gobbled up so much of the steel needed by them. This shortage is in spite of the fact that Canada's defense program to date has not drawn on steel supplies to any appreciable extent.

Steel is not the only item which is in short supply. Copper is another metal on the critical list. So short is this vital industrial material that serious consideration is being given to the development of sources of low grade copper ore by at least one large producer. This, however, is a long-range development and will not materially reduce copper shortages for some time to come. Many railroad purchasing agents already are finding copper wire particularly hard to get, and, in addition, the price has gone up about 40 per cent this past year. A shortage of copper eventually will affect production of electrical and signal material, journal brass and many other items used by the railroads. Allocation of copper to the railroads and their suppliers is virtually a "must", since a shortage of electrical materials would soon decrease the usefulness of the diesel locomotive, and cut into the car-building and maintenance programs.

Of course, the materials supply picture is not altogether black simply because of price increases and materials shortages. The railroads are realizing a better return for their scrap, for instance. About a year ago, scrap was selling at less than $30 a ton, while now the composite scrap price is well above $40. Despite this, many roads are holding out scrap to be reclaimed and used again. If the steel allocation program, coupled with reclamation, is not completely upset by some combination of unhappy circumstances, the end of 1951 should find the railroads in not too bad straits.

Annual Purchases of Equipment—Class I Railroads

Year#	(000)	Year#	(000)
1930	$146,471	1941	$414,690
1931	28,873	1942	325,000†
1932	2,623	1943	248,000†
1933	5,857	1944	255,000
1934	66,850	1945	320,100
1935	35,696	1946	629,510
1936	240,594	1947	701,616
1937	194,153	1948	660,017
1938	74,006	1949	217,032
1939	188,838	1950	1,215,029*
1940	264,943		

*Preliminary estimates.
#Estimated value of orders for new locomotives and cars.
†Estimated value of orders for new locomotives and cars built by equipment builders and placed in service during 1942 and 1943.

Some of the Larger Price Increases in 1950

Item	Jan. 1-June 1	Since June 1
Copper wire	10.8 per cent	19.5 per cent
Paper products—towels, toilet paper		85.0
Pneumatic tires	10.0	27.5
Brooms		53.0
Turpentine	4.0	73.0
Denatured alcohol	12.5	22.0
Bridge and building lumber	20.0	18.0
Wool waste		45.0
Zinc	17.0	3.0
Caboose lamps and parts	0.0	8-46.0
Yellow pine car decking	40-50.0	

1950 PURCHASES OF MANUFACTURED GOODS (Excl. Equipment and Fuel)*

Month	December '50 Compared to Other Months '50 (000) Amt.	% Change	Month	December '50 Compared to Other Months '50 (000) Amt.	% Change
Jan.	$74,314	+48	July	$92,341	+19
Feb.	72,304	+52	Aug.	98,911	+11
Mar.	87,984	+25	Sept.	96,638	+14
Apr.	86,610	+27	Oct.	112,203	— 2
May	98,966	+11	Nov.	105,300	+ 4
June	96,715	+14	Dec.	110,000	

Year	Twelve Months Totals '50 And Other Years (000) Amt.	% Change
1944	$1,024,697	+10
1945	1,017,249	+11
1946	1,017,402	+11
1947	1,217,579	— 7
1948	1,350,291	—16
1949	1,077,247	+ 5
1950	1,132,286	

*November and December, 1950, figures are preliminary, and 1950 totals are subject to revision.

1950 PURCHASES OF RAIL*

December '50 Compared to Other Months '50 (000)

Month	Amt.	% Change
Jan.	$8,806	—15
Feb.	6,444	+16
Mar.	7,669	— 2
Apr.	7,796	— 4
May	10,060	—25
June	7,627	— 2

December '50 Compared to Other Months '50 (000)

Month	Amt.	% Change
July	$9,839	—24
Aug.	8,109	— 8
Sept.	8,245	— 9
Oct.	8,833	—15
Nov.	8,000	— 6
Dec.	7,500	

Twelve Months Totals '50 And Other Years (000)

Year	Amt.	% Change
1944	$75,763	+31
1945	77,038	+28
1946	65,302	+51
1947	87,608	+13
1948	100,073	— 1
1949	94,669	+ 4
1950	98,928	

1950 PURCHASES OF CROSSTIES*

December '50 Compared to Other Months '50 (000)

Month	Amt.	% Change
Jan.	$3,823	+ 7
Feb.	3,985	+ 3
Mar.	4,984	—18
Apr.	5,286	—22
May	5,491	—25
June	5,654	—27

December '50 Compared to Other Months '50 (000)

Month	Amt.	% Change
July	$4,473	— 8
Aug.	4,746	—14
Sept.	4,427	— 7
Oct.	5,073	—18
Nov.	4,300	— 5
Dec.	4,100	

Twelve Months Totals '50 And Other Years (000)

Year	Amt.	% Change
1944	$85,202	—34
1945	77,389	—27
1946	88,478	—36
1947	92,098	—39
1948	87,916	—36
1949	82,048	—31
1950	56,292	

1950 PURCHASES OF OTHER MATERIAL*

December '50 Compared to Other Months '50 (000)

Month	Amt.	% Change
Jan.	$61,685	+60
Feb.	61,875	+59
Mar.	75,331	+31
Apr.	73,528	+34
May	83,415	+18
June	83,434	+18

December '50 Compared to Other Months '50 (000)

Month	Amt.	% Change
July	$78,029	+26
Aug.	86,056	+14
Sept.	83,966	+17
Oct.	98,347	—
Nov.	93,000	+ 6
Dec.	98,400	

Twelve Months Totals '50 And Other Years (000)

Year	Amt.	% Change
1944	$863,732	+13
1945	862,822	+13
1946	863,622	+13
1947	1,037,873	— 6
1948	1,162,302	—16
1949	900,530	+ 8
1950	977,066	

1950 PURCHASES OF FUEL*

December '50 Compared to Other Months '50 (000)

Month	Amt.	% Change
Jan.	$46,700	+24
Feb.	34,823	+67
Mar.	56,725	+ 2
Apr.	51,288	+13
May	48,272	+20
June	48,856	+19

December '50 Compared to Other Months '50 (000)

Month	Amt.	% Change
July	$42,639	+36
Aug.	52,512	+10
Sept.	50,985	+14
Oct.	59,747	— 3
Nov.	54,000	+ 7
Dec.	58,000	

Twelve Months Totals '50 And Other Years (000)

Year	Amt.	% Change
1944	$585,832	+ 3
1945	555,155	+ 9
1946	553,153	+ 9
1947	691,630	—13
1948	833,040	—27
1949	564,159	+ 7
1950	604,547	

1950 TOTAL PURCHASES (Excl. Equip.)*

December '50 Compared to Other Months '50 (000)

Month	Amt.	% Change
Jan.	$121,014	+39
Feb.	107,127	+57
Mar.	144,709	+16
Apr.	137,898	+22
May	147,238	+14
June	145,571	+15

December '50 Compared to Other Months '50 (000)

Month	Amt.	% Change
July	$134,980	+24
Aug.	151,423	+11
Sept.	147,623	+14
Oct.	171,950	— 2
Nov.	159,300	+ 5
Dec.	168,000	

Twelve Months Totals '50 And Other Years (000)

Year	Amt.	% Change
1944	$1,610,529	+ 8
1945	1,572,404	+10
1946	1,570,555	+11
1947	1,909,209	— 9
1948	2,183,331	—20
1949	1,641,406	+ 6
1950	1,736,833	

1950 INVENTORIES OF RAIL**

Oct. 1, '50 Compared to Other Months '50 (000)

Month	Amt.	% Change
Jan. 1	$31,926	+21
Feb.	36,893	+ 4
Mar.	40,594	— 5
Apr.	41,482	— 7
May	38,941	— 1

Oct. 1, '50 Compared to Other Months '50 (000)

Month	Amt.	% Change
June 1	$38,618	—
July	37,542	+ 2
Aug.	38,258	+ 1
Sept.	37,452	+ 3
Oct.	38,478	

Oct. '50 Compared to Other Octs. (000)

Year	Amt.	% Change
1944	$22,253	+73
1945	25,158	+53
1946	25,783	+49
1947	28,084	+37
1948	33,163	+16
1949	37,475	+ 3
1950	38,478	

1950 INVENTORIES OF CROSSTIES**

Oct. 1, '50 Compared to Other Months '50 (000)

Month	Amt.	% Change
Jan. 1	$101,393	—19
Feb.	102,491	—19
Mar.	105,934	—22
Apr.	106,269	—22
May	99,118	—17

Oct. 1, '50 Compared to Other Months '50 (000)

Month	Amt.	% Change
June 1	$95,463	—13
July	90,779	— 9
Aug.	87,711	— 6
Sept.	83,869	— 2
Oct.	82,609	

Oct. '50 Compared to Other Octs. (000)

Year	Amt.	% Change
1944	$70,322	+17
1945	63,300	+31
1946	75,701	+ 9
1947	87,829	— 6
1948	79,148	+ 4
1949	96,515	—14
1950	82,609	

*November and December, 1950, figures are preliminary, and 1950 totals are subject to revision.
**October, 1950, figures subject to revision.
†All total inventory figures taken from I.C.C. statement M-125 for the month indicated.

1950 INVENTORIES OF OTHER MATERIAL**

Month	Oct. 1, '50 Compared to Other Months '50 (000) Amt.	% Change
Jan. 1	$528,400	— 3
Feb.	526,201	— 3
Mar.	525,771	— 3
Apr.	521,506	— 2
May	520,845	— 2

Month	Oct. 1, '50 Compared to Other Months '50 (000) Amt.	% Change
June 1	$518,654	— 1
July	520,334	— 2
Aug.	519,815	— 2
Sept.	515,005	— 1
Oct.	511,420	

Year	Oct. '50 Compared to Other Octs. (000) Amt.	% Change
1944	$430,811	+19
1945	450,008	+14
1946	472,764	+ 8
1947	558,987	— 8
1948	611,887	—16
1949	581,945	—12
1950	511,420	

1950 INVENTORIES OF SCRAP**

Month	Oct. 1, '50 Compared to Other Months '50 (000) Amt.	% Change
Jan. 1	$14,874	— 6
Feb.	14,840	— 6
Mar.	12,922	+ 8
Apr.	14,147	— 1
May	14,269	— 2

Month	Oct. 1, '50 Compared to Other Months '50 (000) Amt.	% Change
June 1	$14,304	— 2
July	13,045	+ 7
Aug.	13,669	+ 2
Sept.	13,538	+ 3
Oct.	14,008	

Year	Oct. '50 Compared to Other Octs. (000) Amt.	% Change
1944	$11,488	+22
1945	10,183	+38
1946	11,424	+23
1947	10,426	+34
1948	14,378	— 3
1949	16,053	—13
1950	14,008	

**October, 1950, figures subject to revision.
†All total inventory figures taken from I.C.C. statement M-125 for the month indicated.

1950 INVENTORIES OF FUEL**

Month	Oct. 1, '50 Compared to Other Months '50 (000) Amt.	% Change
Jan. 1	$48,928	+ 4
Feb.	45,969	+11
Mar.	39,369	+29
Apr.	42,492	+20
May	43,695	+16

Month	Oct. 1, '50 Compared to Other Months '50 (000) Amt.	% Change
June 1	$45,298	+12
July	49,112	+ 4
Aug.	46,329	+10
Sept.	51,429	— 1
Oct.	50,875	

Year	Oct. '50 Compared to Other Octs. (000) Amt.	% Change
1944	$67,357	—24
1945	57,279	—11
1946	54,797	— 7
1947	56,629	—10
1948	95,874	—47
1949	63,534	—20
1950	50,875	

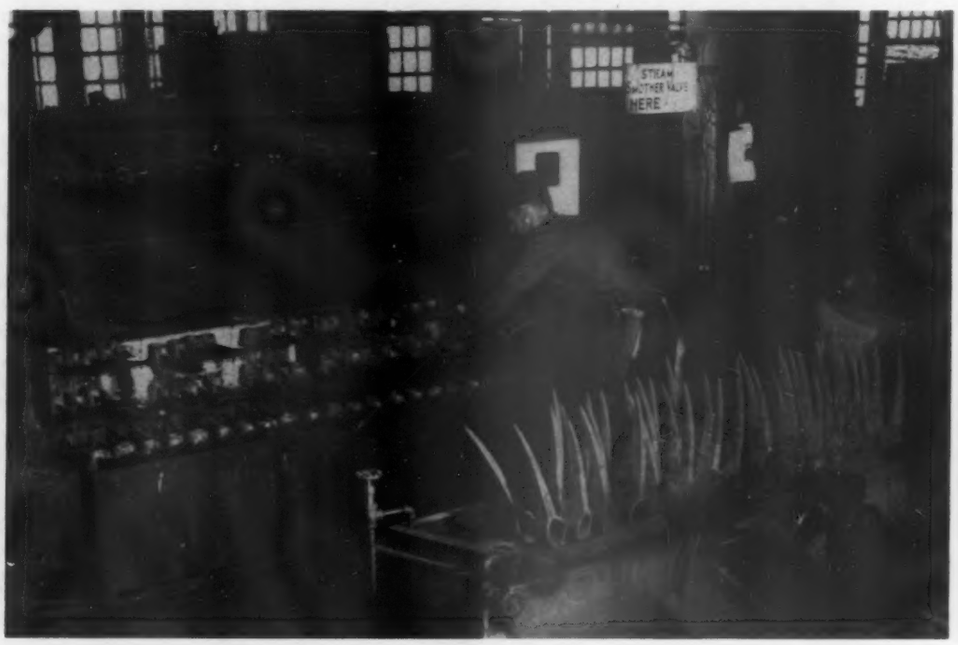
1950 TOTAL INVENTORIES**†

Month	Oct. 1, '50 Compared to Other Months '50 (000) Amt.	% Change
Jan. 1	$725,521	— 4
Feb.	726,394	— 4
Mar.	724,590	— 4
Apr.	725,896	— 4
May	716,868	— 3

Month	Oct. 1, '50 Compared to Other Months '50 (000) Amt.	% Change
June 1	$712,337	— 2
July	710,812	— 2
Aug.	705,782	— 1
Sept.	701,293	
Oct.	697,390	

Year	Oct. '50 Compared to Other Octs. (000) Amt.	% Change
1944	$602,231	+16
1945	605,928	+15
1946	640,469	+ 9
1947	741,955	— 6
1948	834,450	—16
1949	795,522	—12
1950	697,390	

**October, 1950, figures subject to revision.
†All total inventory figures taken from I.C.C. statement M-125 for the month indicated.



The Evanston, Wyo., reclamation plant of the Union Pacific operates regardless of wars or shortages. Here, 50 picks at a time are being heated before being transferred to the quenching bath, in which a rack load of picks already is cooling

Left—AMONG THE EQUIPMENT DEVELOPMENTS of the year was a rail-laying crane having a 55-ft. boom, which is intended especially for handling 78-ft. rails

Right—TWO POWER RAIL LAYERS for putting lengths of continuous welded rails into position in the track were used by one road

Maintenance Machines

Number of units purchased in 1950 was about the same as in previous year, but a large increase is expected in 1951—Dollar value was third largest on record

By MERWIN H. DICK
Engineering Editor

Work equipment continued to gain in importance last year as a means of enhancing the efficiency of the railroads' maintenance-of-way forces. This conclusion is warranted not only by the fact that purchases of such equipment were maintained at a moderately high level during the year, but also by the continued interest of the railroads and the manufacturers in the development of new machines and the improvement of existing units. All this activity reflects the continued importance of factors requiring that maintenance work be carried out with a minimum expenditure of man-hours. These factors, coupled with larger maintenance programs based on an expected upturn in traffic, are expected to result in a substantial increase in work-equipment purchases in 1951.

Based on data supplied to this magazine by nearly all the more important roads of the United States and Canada, it is estimated that the railroads in these two countries purchased in 1950 a total of 8,700 units of power equipment and tools of all types for roadway, track, bridge, building and water-service work. The total estimated cost of these purchases is $18,270,000. The number of units purchased last year was about the same as for 1949, but because of increased prices the dollar value was approximately $750,000 more.

Purchases Still at High Level

A table shows the work equipment purchases and expenditures therefor for each year since 1937. It will be seen that, while the number of units purchased in 1950 was somewhat below those of recent years, it was above any year prior to 1944. Another observation that may be made from this table is that work-equipment purchases are being sustained at a much higher level than prevailed before the war. What this means is that the use of machines for maintenance work has been greatly broadened and intensified during the last decade. While it can be expected that the future will bring many changes in the power units used by the maintenance forces it is difficult to visualize anything but further increases, over the long term, in the purchases of such units.

It is interesting to note that, while the number of units of work equipment acquired in 1950 was exceeded in each of the five years from 1944 to 1948, inclusive, the dollar value of the purchases last year has been exceeded only twice—in 1947 and again in 1948. The fact that the 11,733 units of work equipment that the railroads bought in 1945 cost them less than the 8,700 units acquired in 1950 is a measure of the increased prices that must be charged for such equipment because of higher manufacturing costs.

As the year 1950 dawned a cold fact facing railroad maintenance departments was that the 40-hr. week, with the accompanying sharp increase in hourly wages of maintenance-of-way employees, had gone into effect only four months previously. This event brought with it a fortification of the need for doing maintenance work with a minimum expenditure of man-hours. Normally this would have resulted in a sharp upturn in the volume

ANNUAL EXPENDITURES FOR MAINTENANCE-OF-WAY AND STRUCTURES WORK EQUIPMENT, 1937—1950

	Units	Expenditure
1937	3,310	$ 5,000,000
1938	1,376	2,000,000
1939	3,547	6,000,000
1940	5,414	7,250,000
1941	8,007	10,500,000
1942	7,612	10,270 000
1943	8,507	12,300,000
1944	9,984	14,400,000
1945	11,733	17,500,000
1946	9,939	15,400,000
1947	9,500	19,100,000
1948	9,309	18,700,000
1949	8,700	17,500,000
1950	8,700	18,270,000

TWO TYPES OF CRAWLER-MOUNTED MACHINES for cleaning shoulder ballast were introduced during the year. Both are shown (above and below) in operation in the South

Consolidate Gains

of work equipment purchases, but uncertain business conditions during the first half of 1950 had a definite dampening effect on the railroads' plans to buy more equipment. However, along with the improvement in business conditions that occurred in the later months of the year, there was a marked revival of interest in obtaining additional maintenance-of-way machines, and this interest is certain to carry over into this year, with tangible results for the manufacturers.

There is a solid basis for the belief that work equipment purchases will show a sharp upturn this year, providing, of course, that the manufacturers are able to obtain the necessary materials. Sixty-five railroads have provided *Railway Age* with dollar estimates of the amount of work equipment they plan to buy in 1951. Of these roads, 42 expect to spend more money for this purpose than in 1950, while 23 reported that they would spend less. Specifically, the planned purchases of work equipment of these 65 roads as a group will amount to $7,164,159, an increase of $2,005,656, or 39 per cent, compared with 1950. If past experience is any criterion there is a strong possibility that the actual purchases of these roads will be even larger than the estimated figure.

New and Better Machines

Steady progress was noted during the year in the improvement of existing machines to get greater effectiveness and efficiency and in the development of entirely new models. Ranking high in importance in the latter respect was the introduction of two off-track crawler-mounted machines for cleaning the ballast in the track shoulders. Pilot models of both machines were subjected to extensive service tests during the year on a southern road. Also, experiments were continued with new types of crosstie-renewal machines. Other developments of the year included the introduction of a rail-laying crane with a 55-ft. boom, designed especially for laying 78-ft. rails, and the adaptation of the power rail layer for placing rails of this length, and also for handling lengths of continuous welded rail into position in the track.

Large mass-production machines of all types—such as on-track tamping units, ballast-cleaning machines, and track-cleaning equipment, especially for use in yards—continued in the spotlight during the past year. Rather paradoxically, in spite of the seeming preoccupation of maintenance men with large tamping machines, there was a substantial increase in 1950 in the reported purchases of the smaller pneumatic and electric tie-tamping outfits. Specifically, a total of 462 such outfits were reported purchased during the year, compared with 386 in 1949.

Further extension was noted last year of the practice of renting maintenance machines from manufacturers. In fact, 26 roads reported renting such equipment, one of which reported that such equipment, at a rental of $5,000, was used to ballast five miles of track.

Continued concern on the part of maintenance officers in reducing the unproductive time of their track and other gangs was reflected in a further increase in the number of highway trucks purchased for the transportation of men, as well as materials and equipment. The reporting railroads said that they bought 897 units of this type (not including passenger automobiles) last year, compared with 737 in 1949.

Carriers Plan Expanded Mechanization

War traffic and anticipated manpower shortages make mechanical handling of company supplies and revenue freight still more desirable

By J. W. MILLIKEN
Associate Editor

Despite the fact that half of 1950 was a bad year, traffic-wise, for the railroads, they made considerable progress in further mechanizing their materials-handling facilities, in all departments. For instance, some 123 fork lift trucks, 37 tractors, 6 mobile cranes, 142 burden carriers, 1,760 4-wheel trailers, thousands of pallets, 3 25-ton diesel locomotive cranes, and hundreds of units of miscellaneous equipment, including hoists and jacks, were installed by a representative group of railroads in their stations, storehouses and shops. The transportation departments of the same roads have informed *Railway Age* that they newly mechanized 10 stations in 1950, with the rest of the equipment installed by that department going to stations at which some equipment already had been placed. (In addition to the above-mentioned equipment several stations were equipped with "merry-go-round" conveyors.)

In the past year, several more railroads began the use of some type of small l.c.l. containers. Also, several roads reported increases in the amount of palletized freight being offered for shipment. One Midwestern road pointed out that a considerable volume of government freight was being palletized, while an Eastern carrier stated that wet batteries were being delivered to the freighthouses of that road on pallets and that the freight stayed on the pallets for movement to the consignee. All these developments are making for increased economy in freighthouse handling of l.c.l.

The stores departments, not to be outdone by the stations forces, also moved ahead in mechanizing their operations in 1950. A trend which has been noticeable for several years is the substitution of diesel locomotive cranes for the older steam cranes, for handling scrap and other heavy materials. Where diesel cranes have replaced steam equipment, they have made considerable savings for the using road, not only in fuel costs but in the expenses for labor, operation, and maintenance. There is another decided trend, i.e., the use of larger capacity fork trucks in materials yards for handling lumber in unit loads. (The Burlington, for example, is handling all except the heaviest bridge timbers with its fork trucks. The Union Pacific also has gone into this method of handling quite extensively.)

When the fork truck is used, lumber received on flat cars is unloaded in unit loads. If such freight arrives in gondolas, in some cases a fork truck with a boom attachment is used for the job. When the dressed lumber arrives in box cars, it must, of course, be unloaded by hand, but it is made into a unit load by using a jig, and then moved to the storage pile. While the cost of unloading is cut considerably by these methods, roads using the system state that the big saving is realized in moving the lumber from the storage pile to the place where it will be used. Hitherto, lumber had to be moved, by hand, from the pile to some sort of vehicle for transportation to the place of use. Now the fork truck merely lifts a load and places the lumber on the transport vehicle or on the ground for a straddle truck to pick up.

Within the past several years one of the increasingly popular units of handling equipment in the stores department has been the lift gate, which takes the place of the normal tail gate of a truck. Since stores department delivery trucks must pick up or set off much heavy material at places where no handling equipment is available, the lift gate is saving many strained backs and countless man-hours as well.

Plans for 1951 have not jelled completely for any of the roads, which is not surprising in view of the generally unsettled conditions prevailing. However, if materials handling equipment manufacturers can make such machinery available to the railroads, 1951 should show a substantial increase in mechanical handling by the railroads. To be more specific, 33 Class I railroads anticipate putting into service (in stations and storehouses) the following materials handling equipment: 126 fork trucks; 400 burden carriers; 7 low-lift platform trucks; 13 tractors; 8 industrial crane trucks; 4 diesel locomotive cranes; and 1,000 trailers or live skids. With business due to increase rather than to decrease, these figures may well be increased as the year goes along.

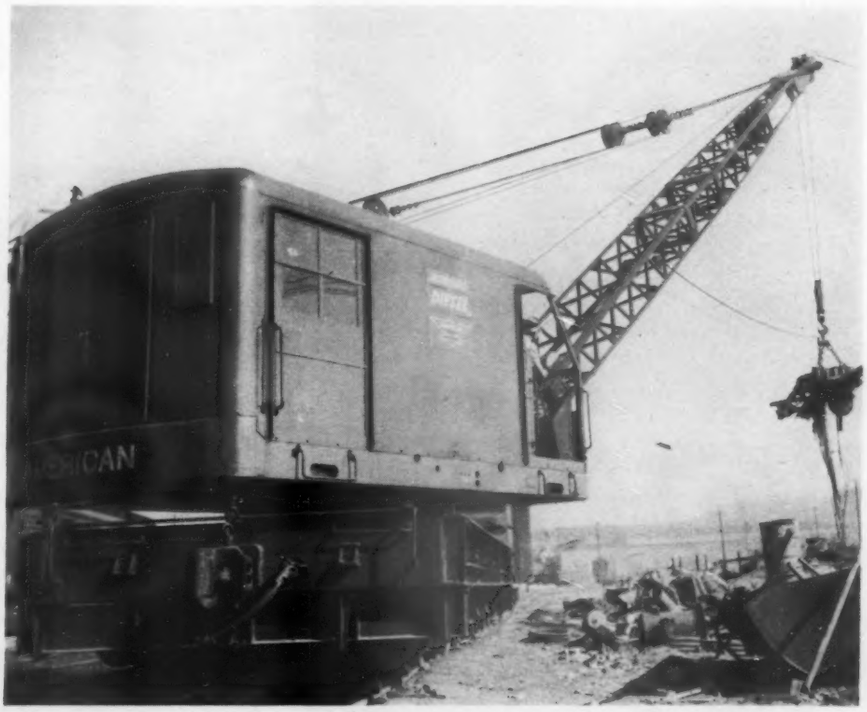
In order to take full advantage of the economies inherent in the fork truck-unit load method of handling freight, some roads are thinking more and more seriously about how to have more unit loads, preferably made by the shipper, brought to the freighthouse. Generally speaking, these roads will furnish some sort of small container to the shipper for loading. At least one railroad is trying to get some of its connections interested

THE OUTLOOK

With a high volume of l.c.l. and export traffic virtually assured for 1951 railroad plans for obtaining equipment which will help them to do a better and more economical job of handling the traffic are beginning to take shape. Remembering the manpower shortages of World War II, the carriers feel that mechanized equipment will limit to a certain extent the need for an increased labor force. So, in 1951, 33 roads plan to buy and put into their freighthouses 126 fork trucks, 400 burden carriers, 25 tractors and more than 1,000 4-wheel trailers, plus, of course, thousands of pallets, and several different types of containers. The M.P. expects to expand on its "Speedbox" shipping plan, giving "all commodity" rates on quantities of l.c.l. which vary between 400 lb. and 1,000 lb. It may be that this plan will be so advantageous that soon it will spread to other carriers, perhaps effecting welcome economies in handling l.c.l.

The stores departments have set as their goal for 1951 better utilization of the equipment now on hand.

Program for Stations and Storehouses

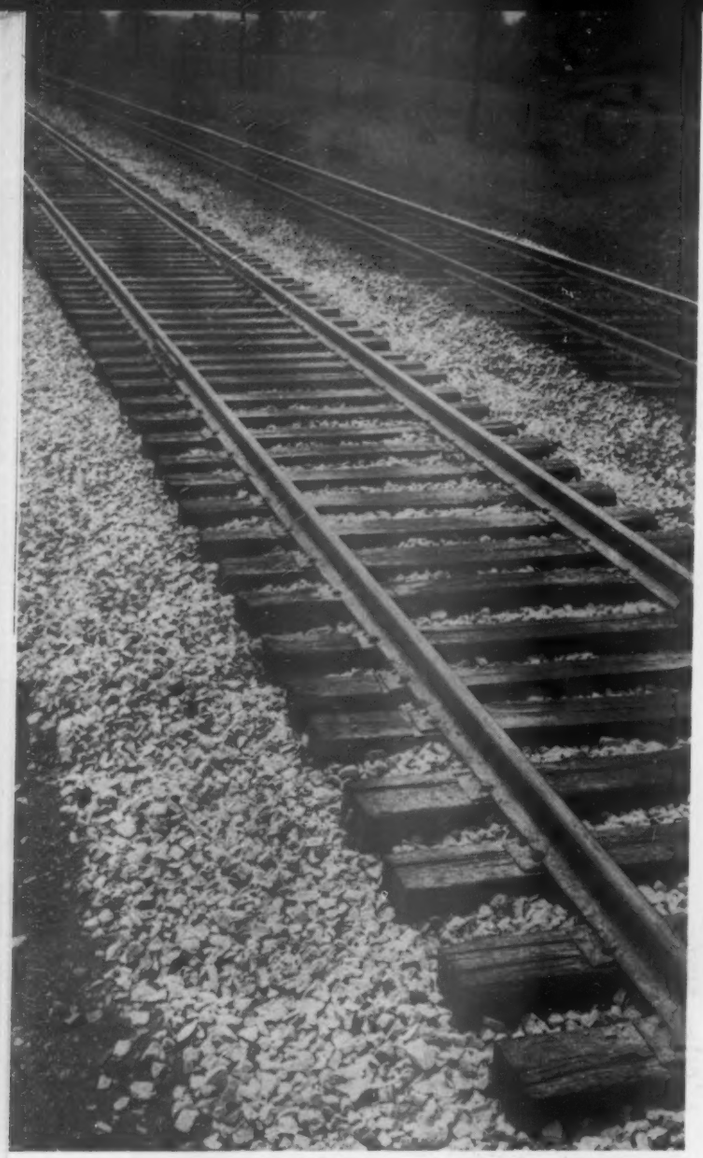


Replacement of steam locomotive cranes with diesel-powered units has saved the stores departments of many railroads a great deal of money. Here a diesel crane at the Huntington, W. Va., stores of the Chesapeake & Ohio handles some scrap

Electric equipment, including trucks such as this "Freightmaster" and electric fork trucks, are getting increasing attention from railroad transportation departments. This truck is in service at the Reading's Wayne Junction (Philadelphia), Pa., transfer

in letting such containers go to destination stations on the connecting lines. If all freight is for one consignee the container would be delivered to his door, but if the contents of the box are destined to more than one receiver, bulk would be broken at the local station.

If the plan goes into effect both l.c.l. freight and forwarder traffic will be handled in this manner. The same railroad also feels that with equipment for handling palletized freight available at a number of its stations, it can begin palletizing or containerizing between these on-line stations. Officers of this railroad are convinced that as more mechanical handling equipment becomes available, and shippers become aware of this fact, more palletized freight will be sent to the stations.



A stretch of heavy-duty track immediately after it had been raised and surfaced with modern ballasting equipment and methods. How to keep such tracks to a high standard of upkeep while holding expenditures for this work under rigid control is a perennial problem for maintenance officers

Maintenance Indices

By MERWIN H. DICK
Engineering Editor

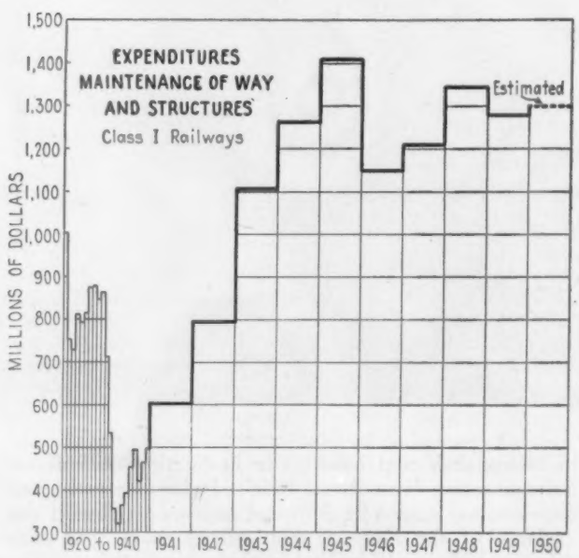
Expenditures for upkeep of tracks and structures in 1950 were slightly above the previous year — Small declines occurred in rail and crosstie renewals

It would be difficult to find two consecutive years in the history of railroading in which there was less variation in the major indices of maintenance-of-way activity than occurred between 1949 and 1950. True, there were changes in the yardsticks of activity for which information is available, but in general these were so slight as to be almost negligible. However, as is so frequently the case with bare statistics, the figures for 1950 mask an undercurrent of developments that belie the unruffled surface of the statistical waters. And as the year drew to a close maintenance-of-way officers were figuratively girding themselves to cope with shortages of materials and manpower which are expected to appear early in 1951—at a time when many roads are planning enlarged programs of maintenance-of-way work.

Based on actual figures for the first nine months of the year it is estimated that the Class I railroads of the country spent $1,300 million on the maintenance of tracks and structures in 1950. This figure represents only a very slight variation from that for 1949, being an increase of $18.4 million, or 1.4 per cent, as compared with the expenditures for the previous year. Thus, bolstered by the higher wages and prices now prevailing, maintenance expenditures, as shown by one of the charts, are being carried along on the same high level that has prevailed in recent years.

The Story Behind the Figures

A closer examination of the maintenance expenditures on a month-by-month basis reveals a somewhat different story than is told by the overall figure. During the first nine months of 1949 the outlay for this purpose was on a fairly even keel and was running about neck-and-neck with the corresponding months of 1948. Then, on September 1, the 40-hr. week went into effect and simul-



The effect of inflation on maintenance expenditures makes a striking contrast with the graphs showing the trend of rail and tie renewals (facing page)

Show Little Change

taneously—and contrary to what might be expected under the circumstances—maintenance expenditures dropped sharply, being about 16 per cent less in September than in August. Throughout the remaining months of 1949 outlays for maintenance remained at a substantially lower level.

Entering 1950, these expenditures were on about the same curtailed basis as during the closing months of the previous year, but as time went by they began to pick up until in August they had returned approximately to the same level that prevailed in the corresponding month of 1949. Then, in September, reflecting the improved state of railroad business that began to make itself felt about that time, maintenance expenditures jumped substantially ahead of the previous year—and there can be little question that they continued at the relatively higher level throughout the remainder of the year. What all this adds up to is that, while the activities of the maintenance forces were declining at the end of 1949, they were on the upgrade in the closing months of 1950, with the prospect that generally higher levels of activity will prevail in 1951.

In spite of the tight rein maintained over maintenance outlays by the railroads as a whole in 1950, it must be recorded that the maintenance ratio (maintenance expenses expressed as a percentage of operating revenues) of the Class I roads as a group showed little improvement. For the first nine months of the year this ratio was 14.1 per cent. While this is a slight improvement over the ratio of 14.9 established in 1949, it is still substantially higher than what would have been considered normal before the inflationary spiral of wages and prices began during World War II. Because of these changed economic conditions it is only of academic interest to point out that for the 10 years ending with 1944 the average maintenance ratio was 11.7. In all probability, considering how much wages and costs have gone up, the maintenance ratio would be much higher today were it not for the extensive use of power equipment and the greater permanence of the present-day track structure.

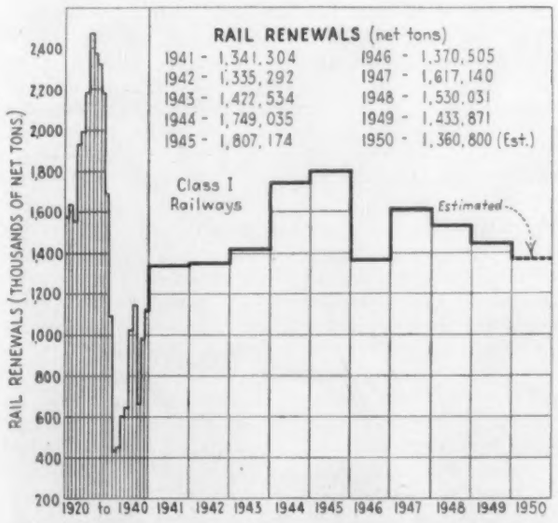
THE OUTLOOK

Granting that forecasting any kind of future activity these days is a risky business, a large number (81 to be exact) of the Class I roads have been willing to estimate the extent of the rail and crosstie renewal work they expect to carry out in 1951. On the basis of these year-end forecasts, and assuming that the roads will be able to obtain the materials and labor to carry out their projected programs, it is estimated that the Class I roads as a whole will lay 1,580,000 net tons of new rail in 1951, an increase of 219,200 tons, or 16.1 per cent, as compared with 1950. On a similar basis, it is estimated that these same roads will insert 32,800,000 crossties in 1951. This will be an increase of 2,850,000 ties, or 9.5 per cent, over the tie renewals made in 1950.

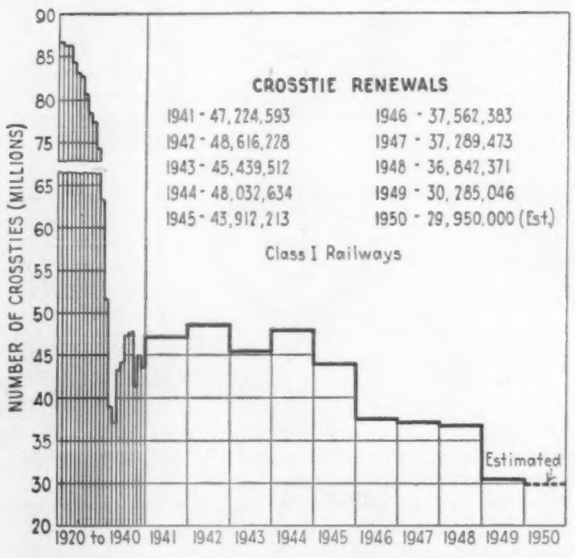
Outlook Doubtful Early in 1950

Like the total maintenance expenditures the amount of new rail laid for replacement purposes and the number of ties inserted in renewal work in 1950 showed little change as compared with 1949. Both of these categories of activity were influenced by the generally unfavorable outlook that prevailed for railroad business during the early months of the period, causing railway managements to be reluctant to commit themselves to the larger rail- and tie-renewal programs that would have been justified if the condition of the properties had been the primary consideration.

One of the accompanying charts shows the trend of rail renewals on the Class I roads since 1920 and in-



The unfavorable business outlook at the beginning of the year was the primary reason for the slight decline in 1950 in the tonnage of new rails laid in replacement



The small decrease in tie renewals in 1950 brought the total to a new low for the third consecutive year. A moderate increase in this maintenance activity is expected in 1951

A portion of a rail-renewal gang in operation on a large railroad. According to the Bureau of Valuation of the Interstate Commerce Commission, the amount of new rail laid in recent years has been insufficient to prevent the accumulation of a considerable amount of deferred maintenance in this important item of track work

cludes actual figures giving the net tons of new rail laid in replacement from 1941 to 1950, inclusive. The figure shown for 1950 (1,360,800 net tons) is an estimate based on figures supplied to *Railway Age* by practically all the Class I carriers. The variation from 1949, being 73,000 tons, or 5.1 per cent, downward, was so small as to be of little significance.

Tie Renewals at New Low

The fluctuation in the number of tie renewals, which was also in the downward direction, was even less perceptible than the decline in the rail tonnage laid. Another chart shows the trend of tie renewals since 1920, and includes actual figures showing the number of ties inserted in each year during the period from 1941 to 1950, inclusive. As with rail renewals, the figure for 1950 is an estimate based on data submitted by practically all the Class I roads. The renewals shown for last year amount to 29,950,000 ties, a decrease of 335,000, or 1.1 per cent, compared with 1949.

For the third consecutive year tie renewals reached a new all-time low. During the last two of these years the renewals were even substantially below the lowest levels reached during the depression. While it is generally agreed that the methods being used to impart greater longevity to crossties are responsible to a large extent for the decline in renewals, there can be little question but that, due to economic conditions, the ties inserted by the railroads as a whole in recent years have been below actual requirements. A tipoff to the truth of this statement is given by the fact that in 1951, when railroad business is expected to be somewhat better than it was last year, many railroads are planning to step up their tie-renewal programs substantially.

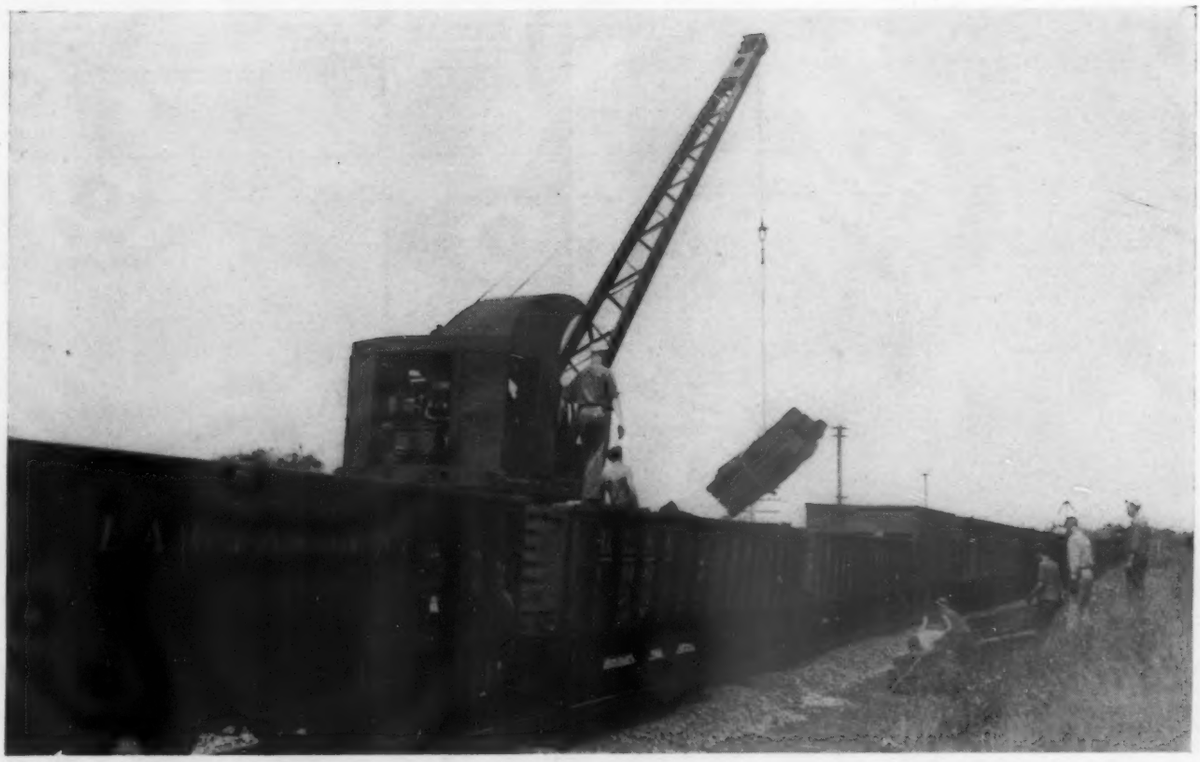
While there were no revolutionary developments in the maintenance-of-way field in 1949 a number of happenings of the year are worthy of mention.* One of these is the really remarkable way in which the maintenance forces have adjusted their operations to the 40-hr. week. The necessity of reducing the work week from six to five days was viewed with concern by many maintenance men, for they foresaw that many major adjustments would have to be made. But on practically all roads these adjustments were made so skillfully that it was only a short time before the maintenance organizations were functioning on the five-day basis so smoothly that one would think the 40-hr. week had been in effect for many years.

During 1950 there were no major changes in the wages or working hours of maintenance-of-way and structures employees. However, along with 14 other non-operating brotherhoods, the Brotherhood of Maintenance of Way Employees has made demands on the railroads for a wage increase of 25 cents an hour. The supply of maintenance labor was ample in most sections of the country throughout the year, but it is fully expected that, because of the buildup of the nation's armed forces, along with the manpower demands of war production plants, it will become progressively more difficult in 1951 to obtain all the labor required to carry out the enlarged maintenance programs now contemplated.

Acting both individually and collectively, the railroads continued their efforts to develop a track structure that will be more economical to maintain. With this end in view research projects that received particular emphasis during the year were those designed to develop means of lengthening tie life and to get better performance at joints through lubrication. One important step taken by the American Railway Engineering Association was the formation of a special committee to make a thoroughgoing study of continuous welded rail.

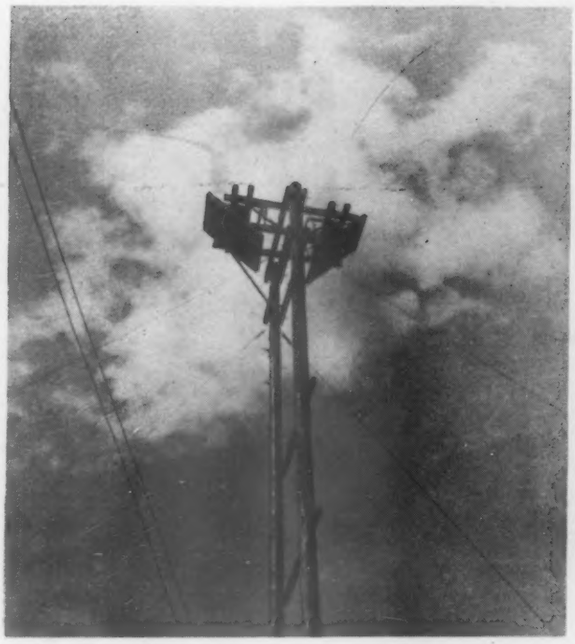
With an eye on the tense international situation the A.R.E.A. has taken steps to revive the organization that was set up during World War II to consider and advise on any emergency matters affecting A.R.E.A. standards that might arise because of the rearmament program. To this end the Board of Direction has set up an emergency committee within itself, and four technical emergency committees of association members, including one on track problems, another on structural problems, a third on fuel, water and sanitary facilities, and a fourth on ties and wood preservation. Acting through the standing committees, these technical committees have been asked to revive the emergency provisions and specifications that were in effect during World War II. A still more recent development is a move to have the standing committees reestablish the subcommittees that were organized during that war to advise on ways of dealing with shortages of labor and materials.

*Since developments in work equipment are the subject of a separate article in this issue they are not covered in this discussion.



Unloading new crossties in preparation for a renewal program—a familiar scene in many parts of the country

Railroad maintenance departments were not long in adjusting their operations to the 40-hr. week. Contrary to general expectations there was a decline in the number of maintenance employees after the short work week went into effect



Left—Beamed-radio tower at repeater station in the Rock Island's 106-mile microwave relay installation between Norton, Kan., and Goodland, completed in 1950. Telephone and telegraph communications are beamed vertically by super-high-frequency radio waves from an equipment house at the base of the tower to the reflectors shown at the top of the tower, and thence horizontally in a straight line of sight to adjacent repeater stations. The Santa Fe, during 1950, announced plans for a similar installation, to provide additional communications between its offices in Galveston, Tex., and Beaumont, approximately 70 air-line miles. Right—During 1950, 188 yard locomotives and 54 fixed stations were equipped with train communication equipment. A total of 205 road-service locomotives, 183 cabooses or other cars and 29 wayside stations were so equipped. Such figures indicate an increase in train communication activity in 1950

More Train Communication in 1950

Beamed radio for transmission of communications between distant points, increased train communication and new, improved power supply systems highlight 1950 in railway communications

By MAURICE PEACOCK
Associate Editor

As evidenced by the accompanying tabulation, comparing communication facilities installed on the railroads in the United States and Canada during 1950 and 1949, the railroads as a whole last year continued progressively to install modern telephone, telegraph, radio and other communication facilities. While some activities were below those for 1949, others were up and, in general, these accomplishments contributed substantially to increased railway operating efficiency and improved service to patrons. If world conditions continue as they have during the past several months, activity in the railway communications field during 1951, to further increase the efficiency of getting trains over the road and in and out of terminals, may possibly exceed that for 1950 by a substantial margin, depending, of course, upon equipment availability and other factors.

Outstanding among the railway communication developments and installations in the United States and Canada during 1950 were the Rock Island's beamed radio or microwave installation between Norton, Kan., and Goodland, 106 miles, and the Santa Fe's program for a similar system between Galveston, Tex., and Beaumont, about 70 air-line miles. The principal purpose of the Rock Island's project, which is on the road's main line from Chicago to Denver and Colorado Springs, is to replace conventional telephone and telegraph line wires between Norton and Goodland, and thereby eliminate serious interruptions of communication service, which have been experienced in the past, due to severe sleet and ice storms disrupting pole lines in that territory. The Santa Fe's microwave installation is to provide ad-

Left—A total of 59 more locomotives and 33 fixed stations in yard service were equipped with train communication equipment in 1950, as compared with 1949. There were totals of 1,140 two-way talk-back speakers, 387 paging speakers and 104 control points installed in yard loudspeaker projects during the year. Right—The total increase in miles of road dispatched by telephone reported by the railroads of the United States and Canada in 1950 is 1,792, compared with 1,143 miles of road during 1940—a difference of approximately 649 miles

ditional telephone and telegraph circuits between its offices in Galveston and Beaumont.

On the Rock Island, beamed-radio equipment connects at Norton with the pole line extending east along the railroad, and at Goodland with the pole line extending west. Between these terminal stations, there are four unattended automatic repeater or relay stations to provide communication for intermediate points. The microwave system thus handles local communications, as well as through traffic, such as that between Chicago and Denver. On the Santa Fe, three repeater stations will be installed between Galveston and Beaumont, with duplicate equipment at both terminals and the repeater locations, to assure continuous operation. Illustrated descriptions of the Rock Island's microwave system were published in the October 7, 1950, *Railway Age*, and the November 1950 *Railway Signaling and Communications*.

Growing Interest in Microwaves

In discussing microwaves at the 27th annual meeting of the Communications Section of the Association of American Railroads last October, Commissioner E. M. Webster of the Federal Communications Commission said: "Considerable interest has been evidenced by individual railroads and other groups in the use of microwave frequencies in the area above 300 megacycles, and one of the questions that has arisen concerns the promulgation of standards for their use. In its recent revision of rules governing the railroad radio service, the commission listed specific microwave frequency bands for use on an experimental or developmental basis. No attempt was made to establish technical standards, to limit the types of communication permitted—point-to-point, mobile, etc.—or to suballocate the bands.

"The availability of the microwave region of the spectrum opens up an entirely new field. While certain techniques were developed during the war for the application of microwave frequencies to specific uses such as radar," he continued, "very little was done towards the development of equipment or technique for the adoption of these frequencies to communication needs. After the war, research laboratories and manufacturers commenced an active experimental program directed to this end. As a result, a number of manufacturers recently have placed on the market new types of microwave equipment."

Yard and Road Train Communication

Activity in space radio and inductive train communications in yard and road service during 1950 was above that for 1949. On this Commissioner Webster, in addressing the Communications Section, stated: "I am glad to say railroad radio is over the hump." He commented further: "More than one-half of the larger railroad systems of the country are now making use of radio in connection with some phase of their operations. Many of them are using it in main-line operations on one or more divisions, and are steadily extending it to other divisions. Still more are confining it only to yard and terminal operations. Many of the smaller roads are also using it in both types of operations. During the past year, the number of stations operating in the railroad service has increased some 64 per cent."

According to figures submitted to *Railway Age* by the railroads of the United States 188 locomotives and 54 fixed stations in yard service were equipped with train communication equipment during 1950, compared with 129 and 21, respectively, during 1949. In road service, 205 locomotives, compared with 132 in 1949, and 183 cabooses or other cars, compared with 75, were equipped during the year with train communication equipment, although the number of additional wayside stations

placed in service decreased from 81 in 1949 to 29 in 1950.

Among sizable yard radio projects completed during 1950, the Burlington equipped 16 locomotives for system yard service; the Missouri Pacific, 10 locomotives and one fixed station at Kansas City, Mo.; the St. Louis-San Francisco, 12 locomotives and one fixed station at Tulsa, Okla.; and the Southern Pacific, 14 locomotives and three fixed stations at Los Angeles, Cal. Of sizable road-train communication installations, the Erie equipped 33 more locomotives and six cabooses in connection with its New York-Chicago main-line radiotelephone system, which is due to be completed this year. The Bangor & Aroostook equipped 14 locomotives, eight cabooses and six wayside stations between Herman, Me., and Oakfield, 119 miles; and the Missouri Pacific, 53 locomotives, 60 cabooses and two wayside offices, between Pueblo, Colo., and Little Rock, Ark., 1,075 miles, as well as four locomotives and a like number of cabooses and wayside offices between St. Louis and Kansas City, Mo.

Communication Facilities Installed on the Railroads in the United States and Canada During 1950 and 1949

	1950	1949
Miles of new or rebuilt pole line:		
Railroad owned	3,770.4	4,271.4
Commercially owned	1,310.4	1,496.2
Jointly owned	1,238.5	5,581.2
Totals	6,319.3	11,348.8
Miles of new copper line wire:		
Railroad owned	6,646.4	10,458.2
Commercially owned	2,019.0	5,100.2
Totals	8,665.4	15,558.4
Increase in miles of road dispatched by telephone	1,791.5	1,142.6
New mileage of long-distance telephone circuits	18,104.8	38,109.6
New mileage of telegraph circuits	58,074.6	45,061.0
New mileage of printing telegraph circuits	33,051.4	38,683.8
New mileage of communication circuits derived by use of carrier	98,380.3	113,960.2
Yard loudspeakers:		
Number of control points	104	114
Number of two-way speakers	1,140	936
Number of paging speakers	387	591
Total number of speakers	1,631	1,527
Yard radio and inductive communications:		
Number of locomotives equipped	188	129
Number of fixed stations	54	21
Road train communication:		
Miles of road	5,402.7	6,690.2
Number of locomotives equipped	205	132
Number of cabooses or other cars	183	75
Number of fixed wayside stations	29	81

Power Supply Systems Improved

Last year saw more light on the subject of power supply equipment for various train communication systems, which has been an important problem from both economic and engineering standpoints. The expense of providing power supplies on rolling stock has, in some instances, limited or eliminated the installation of train communication facilities. Mechanical and electrical difficulties with some types of power-supply units have resulted in complete power failures, or serious damage to communication equipment due to power surges. New power-supply systems, however, which have been under development for railroad use for the past few years, have recently been introduced, and show great promise from the standpoint of simplicity, initial cost, reliable operation and power production and maintenance.

As applying to new or rebuilt pole lines, 6,319 miles of railroad, commercial and jointly owned lines were constructed during 1950, compared with 11,349 the year before, and 8,665 miles of new railroad and commercially owned copper wire were installed, compared with 15,558 in 1949. The Milwaukee constructed 500 miles of new railroad-owned line, and the Missouri Pacific, 376 miles commercially owned. The Santa Fe installed 975 miles of new railroad-owned copper wire, the Missouri Pacific, 984 miles, and the Canadian Pacific, 635 of railroad-owned and 399 miles commercial ly owned.

More Two-Way Loudspeakers

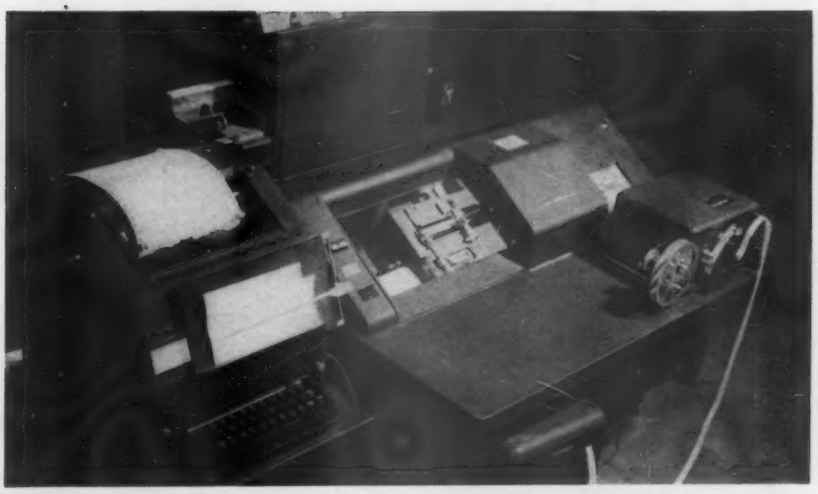
More two-way talk-back loudspeakers were installed in yards during 1950 than in 1949, the figures being 1,140 and 936, respectively. Some of the sizable projects in this field were on the Santa Fe, which installed 38 two-way speakers, three paging speakers and one control point at Chicago; the Wabash, 63 two-way and 17 paging speakers with four control points, at Moberly, Mo.; the Chicago & North Western, 37 two-ways, seven pagers and one control point in a diesel shop at Chicago; and the Southern, 44 two-way speakers, eight paging speakers, and one control point at Chattanooga, Tenn. The Frisco, similarly, placed in service 70 two-way talk-back speakers and 10 paging speakers at Springfield, Mo.

Three railroads—the Santa Fe, the Southern and the Great Northern—reported the installation of telephone and passenger entertainment equipment on passenger trains. The Santa Fe equipped 59 cars, operating in miscellaneous trains between Chicago and Los Angeles, with four-channel medium-level entertainment equipment, and six miscellaneous dining cars, operating between the same points, with luncheon and dinner music equipment. The Great Northern equipped 16 locomotives, operating on its "Empire Builder" between St. Paul, Minn., and Seattle, Wash., with train telephones. The Southern equipped 111 cars operating in four of its best passenger trains with public address and telephone equipment. These include 39 cars used on the "Crescent" between Washington, D. C., and Atlanta, Ga.; 27 cars on its "Southerner" between the same points; 21 cars on the "Tennessean" between Washington and Chattanooga, Tenn.; and 24 cars on the "Royal Palm" between Cincinnati, Ohio, and Jacksonville, Fla.

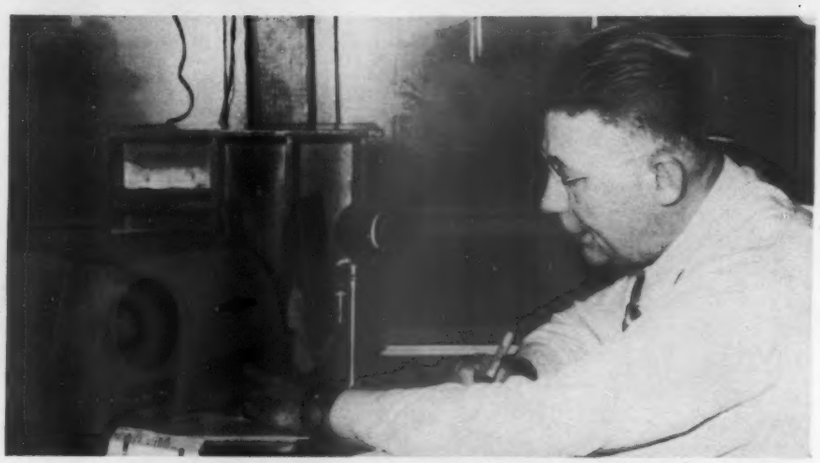
New Communication Circuits

During 1950 there was an increase of 1,792 miles of road in the United States and Canada dispatched by telephone; 18,105 miles of new long-distance telephone circuits; 58,075 miles of new telegraph circuits; and 33,051 miles of new printing telegraph circuits. The Canadian National installed 35,940 miles of new telegraph, 8,050 miles of printing telegraph and 4,452 miles of long-distance telephone circuits; the Canadian Pacific 16,417 miles of telegraph, 9,414 miles of printing telegraph, and 4,441 miles of new long-distance telephone circuits; and the Rock Island 3,467 miles of telegraph circuits. The Pennsylvania installed 2,056 miles of printing telegraph circuits, and the Santa Fe, 3,225 miles. The Chesapeake district of the Chesapeake & Ohio installed 1,218 miles of new long-distance telephone circuits; the Duluth, Missabe & Iron Range, 914 miles; and the Frisco and Union Pacific, 750 miles each.

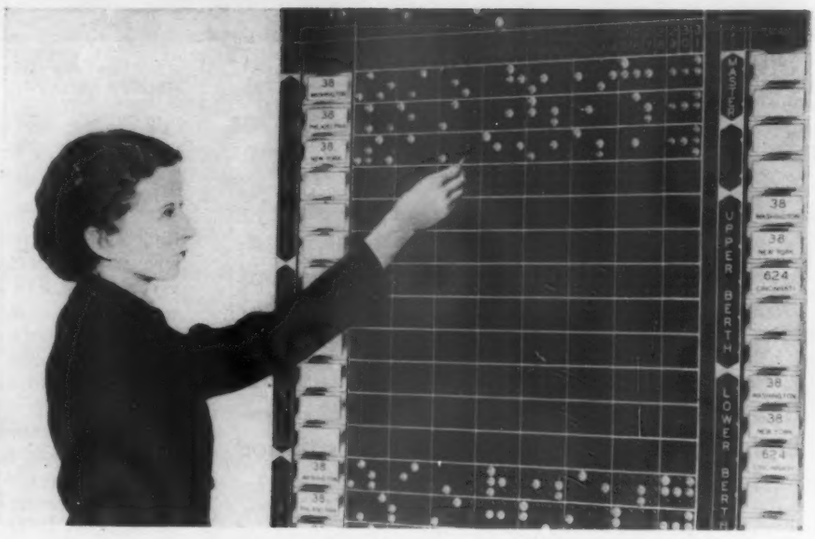
By superimposing carrier on existing line wires, the Canadian National obtained 4,161 miles of new long-distance telephone circuits, 35,940 miles of new telegraph circuits, and 6,571 miles of new printing telegraph circuits. Similarly, the Rock Island secured 3,467 miles of telegraph circuits; the Baltimore & Ohio, 1,011 miles of long-distance telephone and 544 miles each of telegraph and printing telegraph circuits; and the Milwaukee, 2,781 miles of printing telegraph and 307 miles of long-distance telephone circuits. The Southern obtained 1,143 miles of new printing telegraph circuits by superimposing carrier



Printing telegraph and automatic business machine equipment has enabled the Canadian Pacific to expedite freight traffic and render shippers and consignees improved service. A total of 33,051 miles of new printing telegraph circuits were installed by the railroads in the United States and Canada last year



With yard offices and switching locomotives equipped with train communication facilities, the yardmaster has a means of instant contact with the crews under his jurisdiction at all times. During 1950, 188 yard engines and 54 fixed stations were so equipped



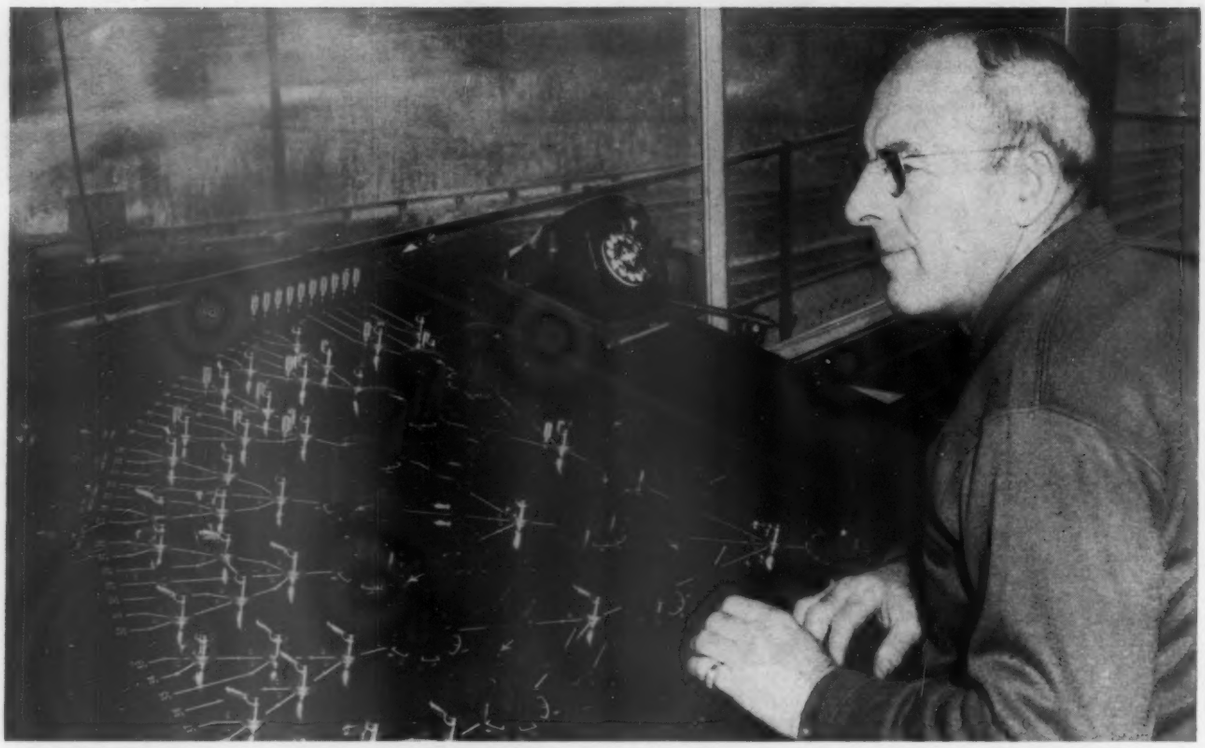
A portion of new recording machine at central train-space reservation bureau installed by the Pennsylvania at Cleveland, Ohio, during 1950. This machine, which is connected to smaller machines in each of the road's ticket offices in the Cleveland area, has receptacles corresponding with months, days, destinations, and trains, for the next 90 days, and 15 classes of accommodations, and can furnish agents with desired space information in a few seconds

on existing wires, and the Canadian Pacific, 4,352 miles of long-distance phone circuits, 16,417 miles of telegraph circuits, and 8,621 miles of printing telegraph circuits.

A detailed survey of the communication activities of the railroads in the United States and Canada appears in the January issue of *Railway Signaling and Communications*. This article includes complete tabulations as to new pole-line construction during 1950, communication circuits and carrier, loudspeaker and train communication installation.

1950 Sees New Adaptations of Signaling to Save Time and Money

By JOHN H. DUNN
Signaling Editor

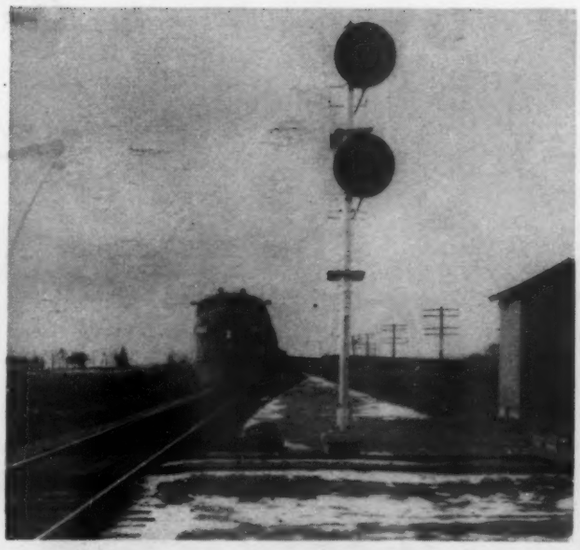


In 1950 the new automatic switch control system was placed in service in two yards, one on the Canadian Pacific and the other on the Illinois Central. The new retarder control machine on the I.C. is shown here

New equipment and signaling arrangements are adapted to volume of traffic and train speeds—New system of control for switches and retarders in classification yards installed on three roads—Construction of signaling as a whole reaches new high volume for 1950, and continued activity is required to meet needs

During 1950, more than ever before, signaling proved to be an asset of immense economic importance to the railroads, not only by saving train time but also by reducing operating expenses—and these are the reasons for a continued active program of new construction in this field for 1951. To a greater extent than ever before, too, signaling installations are being designed to meet specific requirements of train operation with respect to volume of traffic and train speeds. For example, cab signaling or train stop systems are called for on lines where trains are operated at more than 80 m.p.h.; complete centralized traffic control gives maximum track capacity on both single and double track lines; simplified centralized traffic control is suited to medium traffic on single track; and simplified station-to-station automatic block for light traffic which includes a few fast trains. A change-over of conventional double-track to single-track with centralized traffic control, on 70 miles on one railroad in 1950, represents a new phase of the adaptation of signaling. In retarder classification yards, automatic control of switches was a new development placed in service, in 1950, in two yards.

During 1950, the construction of signaling continued at a high level—a total of 12,248 units being placed in service compared with 11,874 in 1949, the previous high year. The 12,248 units for 1950 is 3,422 more than the annual average of 8,826 for the 11-year period, 1939 to



The Milwaukee removed second main track on a 67-mile line and equipped the remaining single track for operation by centralized traffic control

Where traffic is light but includes fast trains, the Rock Island installed station-to-station automatic block controlled by coded track circuits without line wires

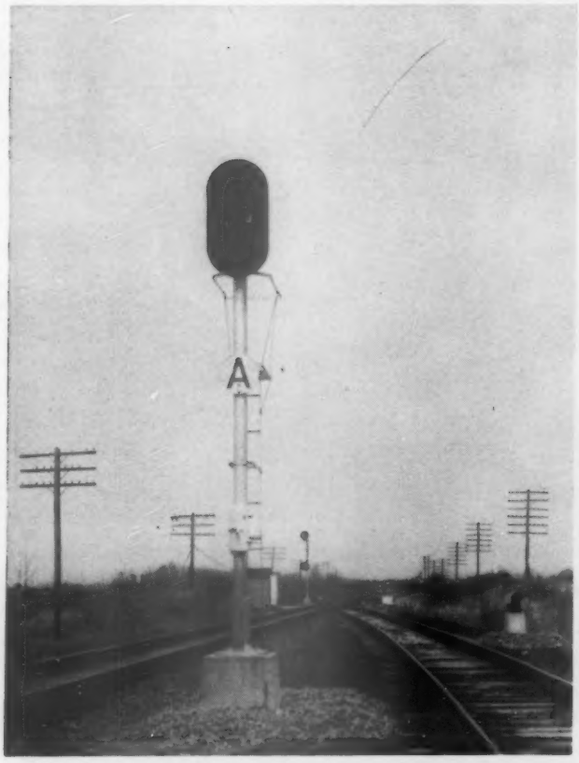
1949, inclusive. As shown in the table, the new construction for 1950 included more automatic train stop, cab signaling, highway crossing protection and new interlockings, which more than offset small reductions in the construction of other systems of signaling. The statistical statements in this article are based on information received from the railroads in the United States and Canada. Detailed tables listing all important signaling projects are being published in the January issue of *Railway Signaling and Communications*.

Some 40-Hour Week Problems

Especially during the first half of 1950, the signaling projects given preference were those which would reduce operating costs by relieving levermen, telegraph operators, crossing watchmen and gatemen. For example, with the 40-hour week, the annual operating expense for an open telegraph office or an outlying interlocking, including wages for operators or levermen, with building maintenance and incidentals, now totals approximately $15,000 annually. Depending on the cash available, some roads have decided that an annual saving of $15,000 justifies an expenditure of $74,000 to $100,000 or more. In 1950, then, preference was given to such projects as: (1) automatic interlockings to replace manual control plants at railroad crossings; (2) remote control of outlying interlockings; (3) consolidation of the control of two or more interlockings in terminal areas; and (4) centralized traffic control to permit the closing of block offices and train order offices. For example, on 103 miles of single track on the Baltimore & Ohio between Grafton, W. Va., and Parkersburg, where C.T.C. is being installed, the annual payroll saving, for operators eliminated, is $180,000. The signal manufacturer which furnished the equipment has entered into an agreement which will enable the railroad to pay for this project through the savings in operating expense. According to experience with earlier C.T.C. projects on this and other railroads, the additional benefits from the new Grafton-Parkersburg project should include increased track capacity and flexibility of train operations, so that passenger trains can

Comparison of Annual Signal Construction

	1950	1949	1948	1947	1946	1945	1944	1943	1942	1941	1940	1939
Automatic block signals	1,133	1,974	1,711	2,269	3,078	2,350	1,539	1,690	1,421	1,407	1,017	879
Cab signaling (Track miles)	274	270	514	....	....	....	....	....	....	....	....	....
Intermittent inductive train stop	953	....	....	....	....	....	....	....	....	....	....	....
Road miles												
Interlockings												
Signals and switches												
At new plants	1,150	863	1,074	857	1,529	9,910	851	1,498	785	518	1,024	396
At rebuilt plants	633	864	665	408	993	940	687	760	554	693	734	545
At automatic plants	106	132	80	83	132	88	62	55	78	80	125	96
Spring switches												
Spring buffer mechanisms	172	242	264	356	554	764	382	448	284	275	294	222
Mechanical facing-point locks	110	73	107	107	248	341	115	88	126	159	97	104
Signals at spring switches	578	455	516	491	707	991	553	498	384	354	336	228
Centralized traffic control												
Power switch machines	430	496	565	538	453	633	596	463	263	190	121	38
Semiautomatic signals	1,309	1,428	1,725	1,810	1,385	2,217	2,141	1,775	1,030	675	375	122
Intermediate signals in C.T.C. territory	674	590	738	853	....	....	....	....	....	....	....	....
Classification yards												
Car retarders	68	110	100	23	18	14	25	....	51	....	11	2
Power switch machines	172	245	192	27	73	57	52	....	108	....	19	3
Highway crossing protection												
Protective units	4,486	4,132	3,261	2,852	2,214	1,089	643	477	1,297	2,615	3,006	2,385
Totals	12,248	11,874	11,872	10,674	11,384	10,394	7,646	7,752	6,381	6,966	7,159	5,020



On single track handling up to 30 trains daily, the Louisville & Nashville installed centralized traffic control between Henderson, Ky., and Cedar Hill, Tenn., an addition of approximately 108 miles to this road's C.T.C. mileage

In 1950 the Western Pacific installed centralized traffic control on 177 miles of single track between Portola, Cal., and Jungo, Nev., making a total of 497 miles of this form of signaling between San Francisco and Jungo

make up time and freight trains can save approximately a minute a mile.

In 1950, perhaps as never before, new signaling projects have been planned with special reference to line density and train speeds. In territories where trains are operated at more than 80 m.p.h., some roads have installed protection in addition to wayside signaling. For instance, in connection with existing wayside signals, the Atchison, Topeka & Santa Fe last year installed intermittent inductive train stop system on 953 miles of road, this being the largest single program of this nature undertaken for many years. Also, the Union Pacific, in connection with wayside signaling, installed coded track-circuit controlled automatic cab signaling on 137 miles of double track between Grand Island, Neb., and North Platte. Similar cab signaling is now under construction on 224 miles of double track between North Platte, Neb., and Cheyenne, Wyo., and on 85 miles of single track and 2.5 miles of double track between Portland, Ore., and The Dalles. The Burlington has authorized expenditures for the installation of cab signaling on 233 miles of road between Chicago and Mt. Pleasant, Iowa, and on 368 miles between Aurora, Ill., and Prescott, Wis. In the tabulated comparisons of signaling construction each year, the wayside automatic train stop is given a value of one unit for each mile of road equipped, and automatic cab signaling is given a value of one unit for each mile of track so equipped.

For Speeds Less Than 80 M.P.H.

In territories not previously signaled, where trains are operated at more than 60 m.p.h. but less than 80 m.p.h., railroads have installed different forms of signaling depending on the number of trains. For example, on 145 miles of single track between Henderson, Ky., and Amqui, Tenn., the Louisville & Nashville schedule includes 12 passenger trains, 10 through freights and two local freights, and extra trains operated as required, a total of 28 to 30 or more trains daily. Here, in order to increase track capacity and save train time, the L. & N. installed in 1950 complete centralized traffic control rather than conventional automatic block. The cost for the C.T.C., over that for automatic block, was reduced considerably by installing C.T.C. controlled switch machines and signals at only 18 of a total of 34 sidings.

Even where the traffic comprises only 10 to 12 trains daily, some roads "cut the cloth" to achieve the benefits of train operation by signal indication under C.T.C. control without disproportionate investment. For example, on 238 miles of single track between Ravenna, Neb., and Alliance, the Burlington operates four passenger trains and six to eight freights, totaling 10 to 12 trains daily. Here the road installed a simplified form of C.T.C., including a power switch and complete arrangement of dispatcher-controlled signals at the east end of a siding, for example, while at the west end there is a spring switch with a single signal to direct trains to depart from the siding. The power switch is at the east end of one siding and at the west end of the next, if grades or other local conditions do not dictate otherwise. About half of this project—Ravenna to Senaca, 131 miles—was completed in 1950. A somewhat similar modified form of C.T.C. was installed in 1950 on 90 miles between Springfield, Mo., and Willow Springs, on the St. Louis-San Francisco.

On some sections of road not previously signaled,

where the traffic is not considered to be heavy enough to warrant C.T.C., simplified automatic signaling has been installed primarily as protection. For example, the Rock Island has 103 miles of single track between Vinton, Iowa, and Manly, on which the traffic is relatively light, approximately 8 to 10 trains daily. This section of track, however, is part of a through route, and the trains include the St. Louis-Twin City "Zephyr-Rocket" passenger trains. No signaling has been in service on this 103 miles previously, and authority was granted for the most simple form of automatic block signaling protection. As installed, the block signaling is of the two-aspect type, with blocks from siding to siding, and no provision for following moves between sidings.

An important 1950 feature, new on the Rock Island for this type of signaling, is that intermediate signals are arranged to provide double braking distances between opposing-intermediates, thereby eliminating overlaps within siding limits, and thus permitting trains to occupy the main track in station limits when making a meet. The signals between sidings are controlled by coded track circuits, thus obviating line wire control circuits. This 1950 Rock Island project is an excellent example of simplified automatic block signaling designed for single-track lines handling relatively light traffic and where the primary objective is to obtain maximum safety, rather than to increase track capacity or facilitate train movements.

Taking Up Second Track

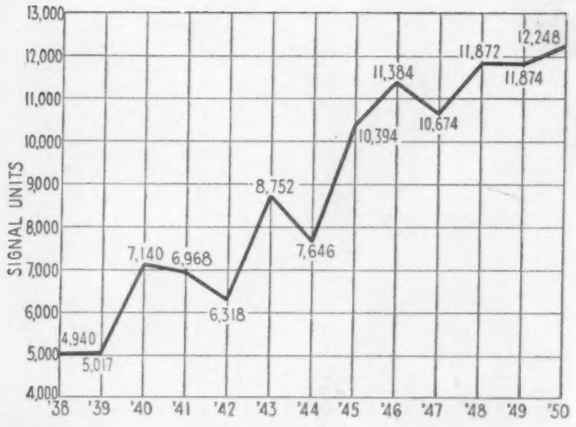
Modern locomotives, changes in the types of traffic handled and other circumstances have made it practicable to handle present-day traffic on single track equipped with modern centralized traffic control in some sections where double track had been in service for years. Therefore, some roads have removed second track in extended territories and installed C.T.C. on the remaining single track.

On 73 miles between Green Island, Iowa, and Marion, for example, the Chicago, Milwaukee, St. Paul & Pacific in 1950 took up second track on 67 miles and installed centralized traffic control, at the same time applying it on 6.2 miles of double track. Of importance is the fact that operating officers report that train operations are being handled promptly and satisfactorily. On this project, the rail on both main tracks was due for renewal. By relaying only one track, the saving was more than $1,500,000 for new rail, fastenings and labor. Furthermore, the ties removed were in good condition, and were used in the construction of a yard. A somewhat similar change, from double track to single track with C.T.C., was made in 1950 on several short sections on the Boston & Maine. Such a project is proposed for 1951 on 60 miles of the Erie between Buffalo, N. Y., and Portage.

Retarders in Smaller Yards

On account of the increased labor costs for switchmen and car riders, favorable consideration is now being given to the installation of power switches and car retarders in small yards, as well as large ones. For example, in 1950, retarders and power switches were installed in a yard with only 16 classification tracks at Pueblo, Colo., on the Atchison, Topeka & Santa Fe. At Montreal, Que., the Canadian Pacific built an entirely new classification yard with 42 tracks, to take over the work formerly done in four smaller yards scattered about the city.

This project is the first all-new yard to include the newly developed automatic switching control of the operation of the switches leading down the hump and to the classification tracks.



Number of signaling units added each year since 1938

This automatic switching permits the introduction of a new type of control for retarders, so that one man in a tower can control all the retarders in the entire yard. Also in 1950, these same new developments in switch and retarder controls were installed to replace previous controls in the Illinois Central southbound yard at Markham (near Chicago) and bids are now being taken for equipment to rebuild the northbound yard and install the new control systems. The Southern is now rebuilding its John Sevier Yard near Knoxville, Tenn., to install power switches and retarders, including this new system of control. Fifty per cent of this project was in service on December 15, 1950, and the remainder is scheduled for completion in January.

More Crossing Protection

During 1950, highway crossing protection construction continued at a high level—including new projects at 1,573 crossings, involving 4,486 units, such as flashing-light signals and gates. This activity represents an all-time high. Increasing preference is being shown for automatic gates in addition to flashing-light signals at crossings where highway traffic is heavy. A total of 1,109 electric gates were installed in 1950, compared with 945 in 1949, and 775 in 1948. Especially at crossings where gatemen or watchmen have been employed, the railroads are providing better protection, in service full 24 hours every day, by installing automatically controlled flashing-light signals with gates.

New interlocking construction in 1950 included 1,150 home signals and interlocked switches, compared with 863 in 1949. Three of the new plants constructed in 1950 include mechanical locking between levers, the modern practice, of using circuit locking, being employed in the remaining. Miniature levers are used on 31 plants, and button-control, entrance-exit or route control on five.

In brief, signaling construction was at a high volume in 1950, slightly more than in any previous year. Because of the necessity to save train time and reduce operating expenses by installing signaling, this construction activity is expected to continue at a high rate in 1951, being limited only by the ability to secure materials and men to prepare plans, design projects, and do the work in the field.

Electrical Trends and Accomplishments

More and more diesels, new types of power, improved electrical products and better shop practices continue to extend the use of electrical equipment in railroad service

By ALFRED G. OEHLER
Electrical Editor

Diesel-electric locomotives have continued as the largest application of electrical equipment to railroad service. There are now nearly 14,000 units in service, representing a total rated horsepower of more than 17,500,000. Capacities have been increased and road locomotive units rated 2,400 hp. have been placed in service. The importance of preventing the spinning, sliding or locking of diesel driving wheels has been recognized, and preventive equipment has been developed.

Reasons for such recognition have been isolated instances of derailments from stuck drivers, burst armatures caused by overspeed and more frequently burned rails caused by standstill slip. Perhaps more important is the general appreciation of the fact that even with excellent rail conditions, it is seldom possible to exceed 20 per cent adhesion. To obtain the hauling power built into the locomotive, it is necessary to arrest slip quickly and immediately restore tractive force at a rate which will not cause a second slip.

Considerable progress has been made with motor bearings. Designs have been improved and better methods of maintenance have been developed. High-temperature greases, sealed in between motor overhauls, have made a remarkable showing. A few years ago, a large percentage of motor failures were bearing failures, and now operators are looking forward to a time when, by rebuilding bearings twice, they may be able to run them up to a total of 3,000,000 miles.

An innovation in the application of diesel locomotives is a rotary snow plow, the rotor of which is driven by traction motors supplied with power from the engine-generator set of a locomotive.

Spectroscopic analysis of diesel engine lubricating oil is used by only a few railroads. The greater number appear to think it is unnecessary, but evidence of the value of this procedure continues to accumulate.

Gas Turbine Electric Locomotive

During the past year, one gas turbine electric locomotive has been operating in regular freight service on the Union Pacific. It is an experimental unit but the results of the experimentation have evidently been satisfactory because the railroad has ordered ten such locomotives. It is reported that exceptionally high adhesion is possible with this locomotive.

A second gas turbine electric locomotive is also on test. Designed for passenger service, it has two power plants placed side by side, and incorporates trucks which can move laterally to the cab to negotiate curves. There are two heating boilers, one oil-fired, the other obtaining its heat from exhaust gases from one turbine.

In its present state of development, the locomotive gas turbine has about half the thermal efficiency of the diesel engine and burns fuel which costs about half as much as diesel fuel. Stationary gas-turbine power plants can use

multiple stages and heat exchangers to raise this efficiency, and it has been suggested that the most effective railroad use of gas turbines would be to place stations along the right of way and use straight electric motive power.

Electrification

Delivery of 100 multiple-unit cars for the New York Central was started in April of this year. All cars are motorized and each axle is driven by a truck-mounted, self-ventilated motor. All cars are air conditioned and equipped with fluorescent lights.

In 1949, a rectifier car was developed on the Pennsylvania and during 1950 two rectifier locomotives were under construction for use on this road. This type of motive power takes advantage of the desirable characteristics of both the alternating-current distribution system and the direct-current traction motor without the added weight of a motor-generator. It might also exert considerable influence on future installations of electric traction because it would permit the use of 60-cycle power on the contact system and eliminate the conversion from 60 to 25 cycles now necessary for a.c. traction motors.

It has been suggested that the railroads could use locomotives powered by atomic energy, but it is the opinion of those best informed that it would be impracticable to operate such a plant within clearance limits. It probably would be necessary, they say, to employ stationary plants and electric locomotives.

Passenger Cars

New passenger cars have reached a high state of development. They provide services and degrees of comfort undreamed of 20 years ago. On the other hand, 74 per cent of all passenger train cars in service are more than 20 years old. The suggestion has been made that the new cars cost too much and that a basic standard be used for the construction of cars of all types to reduce this cost. When orders are large, manufacturers can and do use effective production methods, but very few cars have been ordered during the past two years.

Car electrical equipment has become highly complex, but much has been done by the builders to insure trouble-free operation. Equipment has been greatly improved and although there is an average of three miles of wire in a car, the assembly of the wiring in sections or harnesses with pressure-applied terminals and connectors has gone a long way to eliminate trouble.

An exhibit train now moving about the country has served to show how cars equipped with diesel-powered undercar power plants can operate effectively in parallel, all plants supplying power to the train line and all cars receiving power from the train line. The Rock Island has also demonstrated that undercar power plants may be used successfully in parallel with axle generators.

Electric diners have been equipped with dual undercar power plants and the Pennsylvania has demonstrated the practicability of supplying power for a twin-unit diner with an all-electric kitchen by means of two 25/30-kw. axle-driven generators.

Lighting Developments

The potentialities of heating cars from the waste heat of undercar plants are being explored and apparatus is being developed for such applications. On-car heating systems using oil or propane as fuel are also in process.

Probably the most important recent advance in railroad lighting is the extended use of the sealed-beam headlights. The practice improves lighting and the two lamps insure the absence of headlight failure which might cause train delays. A variety of front- and rear-end lights for train protection have been developed and are available. Most of these incorporate the sealed-beam lamps.

The de luxe fluorescent lamps which emit red as well as the other colors in the visible spectrum, announced last year, are now being made available in all sizes. Their efficiency is lower than that of the standard line, but their color is good for applications in which this is important.

The manufacturers have announced a new inside-white filament lamp which has only three per cent absorption as compared with 15 to 20 per cent obtained with the best previous methods. Also, a new incandescent lamp of inverted mushroom shape, intended for base-up use in multiple-light ceiling fixtures, directs two-thirds of its light upward and the remainder down.

Shop Practices

Silicone-insulated coils for traction motors are now being used to resist the effects of high temperature and more effectively to dissipate the heat developed in service. In some cases, motors so insulated have had short life between rewinds, but the evidence does not indicate it is the fault of the silicone, since other motors so insulated have turned in excellent performance records.

Silicone is in a state of development and the chemists report that the silicone molecules can be put together in as many different combinations as are possible with organic compounds. Conceivably, present forms of silicone insulating compounds are amenable to further improvement. At present, there are silicone oils and greases which are capable of operating continuously at relatively high temperatures but their lubricating properties leave considerable to be desired.

The use of vapor degreasers in shops continues to increase. The silicone manufacturers look at them with some apprehension, but regular shop practice has established ther effectiveness as a part of routine motor overhaul.

The dip method of soldering commutator risers and coils is used in a number of railroad electrical shops. It is particularly suitable to relatively large shops where a number of armatures can be processed with one heat. High-frequency heating for commutator soldering has also found favor with shop operators since it does a good job quickly on single armatures and provides a quick and clean way of removing coil ends when armatures are stripped.

Solderless commutators have been placed in service. They showed an excellent performance record, but the armatures were damaged in service before real superiority for them could be established.

Induction heaters for removing as well as applying traction motor pinions are finding extended application. The method is fast and the bearings are relieved of the shock caused by mechanical removal. No damage is done to the pinion if the heating is properly controlled.

Probably the most extensive change in shop practice is a consequence of the general appreciation of close tolerances in motor assembly. These concern chiefly bearing fits, bearing housing fits and frame housing bore fits. Practically perfect alignment and very small end play are necessary if both motor and track are to be protected from abuse. Accurate balancing of armatures is essential and it is probably almost as important for wheels. Similarly good track surfacing seems to be much more important to the diesel than to the steam locomotive.

In 1950 the Baltimore & Ohio overhauled accounting methods and procedures in the car service department. Seventy-two I.B.M. machines of various types were required to handle the work

RAILROADS CUT PAPER WORK COSTS

Office methods and procedures groups on some roads help busy department heads—Mechanization still holds spotlight

BY J. W. MILLIKEN
Associate Editor

The year just past has seen considerable progress in the modernization of railroad accounting and statistical procedures and in the introduction of economies in these functions. A combination of circumstances is responsible for this, not the least of which is the better equipment being produced by the manufacturers of office machines and equipment. As this more efficient equipment has become available the railroads have put it to use. For example, one road recently acquired an electronic calculator which replaced five multipliers of more ancient vintage. Thus both payroll expense for operators and rental charges on the equipment have been reduced, while the same amount of work is being done.

THE OUTLOOK

Further mechanization of railroad paper work is in the cards for 1951. In some cases this will mean purchase—or rental—of additional equipment, but much work will be absorbed on equipment already in use or on improved models of that equipment, as they are turned out by the manufacturers. Car accounting and the production of punched cards for statistical purposes, as a by-product of Teletyped waybilling, will be in the forefront of the improvement parade. A Teletype machine which produces a punched tape, which in turn may be fed through the tape-to-card machine to produce punched cards, will make these improvements possible.

More and more, as rail traffic increases and department heads assume greater burdens, the work of planning changes in paper-work methods and procedures will be delegated to a specialized group or person. Because growing traffic will mean an increased volume of paper work, actual money savings of methods and procedures changes may not turn out to be as large as compared to past periods as originally estimated. But as additional clerical help probably will be hard to get, the effect of these new techniques will be important in keeping force increases to a minimum.

Put It Where It's Needed

But to get the maximum benefit from the machinery produced by the manufacturers it must be put to use at the earliest moment in the places where it is needed. To assure the prompt adoption of new machinery, methods and procedures, many railroads have designated groups whose responsibility it is to examine the "new stuff" and then see that it is installed where it will be advantageous. On at least six railroads, the Canadian Pacific, Baltimore & Ohio, Chesapeake & Ohio, Southern Pacific, Western Pacific and Denver & Rio Grande Western, during the past five years these groups have been banded together in formal office methods and procedures departments. In 1951, the Canadian National expects to set up such a department. (How the work of one of these groups has helped one railroad was explained in an article by W. L. Price, vice-president of the Baltimore & Ohio, in *Railway Age* of July 29, 1950.) Other railroads have set up committees which spend a part of their time on methods and procedures work.

Much of the work of the methods and procedures groups (formal or otherwise) has been directed at

mechanization of the larger departments. In the words of R. B. White, president of the B. & O., "studies have been in offices and departments having a large concentration of clerical employment so that the most efficiency and larger economies might be obtained at the outset."

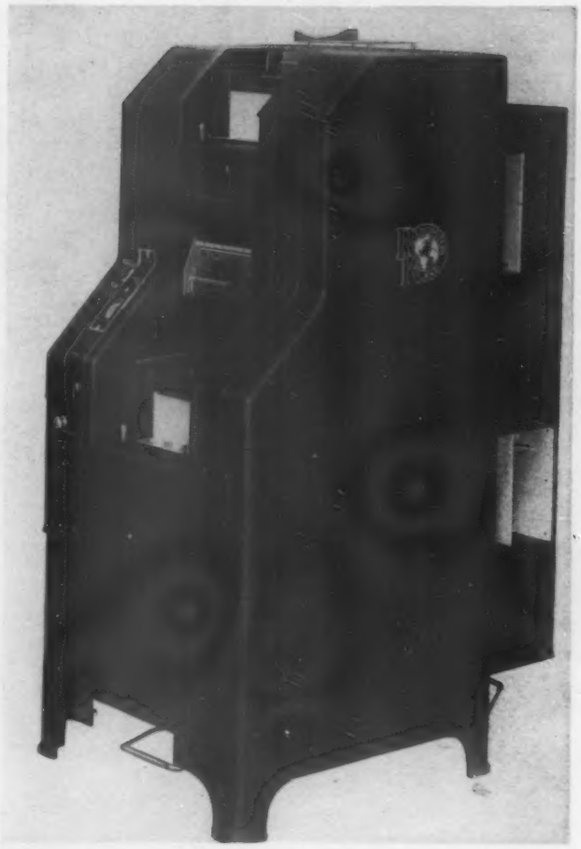
In this connection it is interesting to note that the methods department of the Chesapeake & Ohio, one of those most recently set up, has gone about improving that railroad's position in a somewhat different manner. Primarily theirs has been a job of establishing a financial control pattern for the railroad. This has included setting up in clear-cut fashion the financial objectives of the railway and its affiliated companies and investments, and the measuring of those units' progress toward those objectives. Since the financial position of the railway is made clear as a result of this work the management of the C. & O. expects to be in a particularly good position to appraise the condition of the physical plant and the efficiency with which that plant is utilized.

Changes in methods and procedures made by the railroads in 1950 were many and varied. A few examples will illustrate. The Reading, for instance, installed International Business Machines electronic calculating punches for the application and computation of interline freight revenue divisions. The Atlantic Coast Line, too, began using the I.B.M. calculating punch, but in connection with the percentage method of withholding, and for computation of Railroad Retirement Board tax adjustments monthly on earnings not in excess of $300. The New York, New Haven & Hartford, working in a slightly different field, changed from draft to check payments on all disbursements, while the Chicago, Rock Island & Pacific has made use of the Teletyped wheel report, which also serves as a traffic tracing and passing report, thus eliminating the car service department's daily tracing report and the accounting department's daily voluminous manifest report.

The Louisville & Nashville, appreciating the economies inherent in mechanization, has virtually completed putting its interline abstracting on punched cards. The Canadian Pacific, in a simple change, added line spacing attachments to its tabulating equipment, to make the operation of this equipment more economical. These spacers provide spacing of 4 and 8 lines to the inch instead of the standard 3 and 6. This has resulted in a reduction in the cost of stationery by as much as 25 per cent.

Cost Control Methods

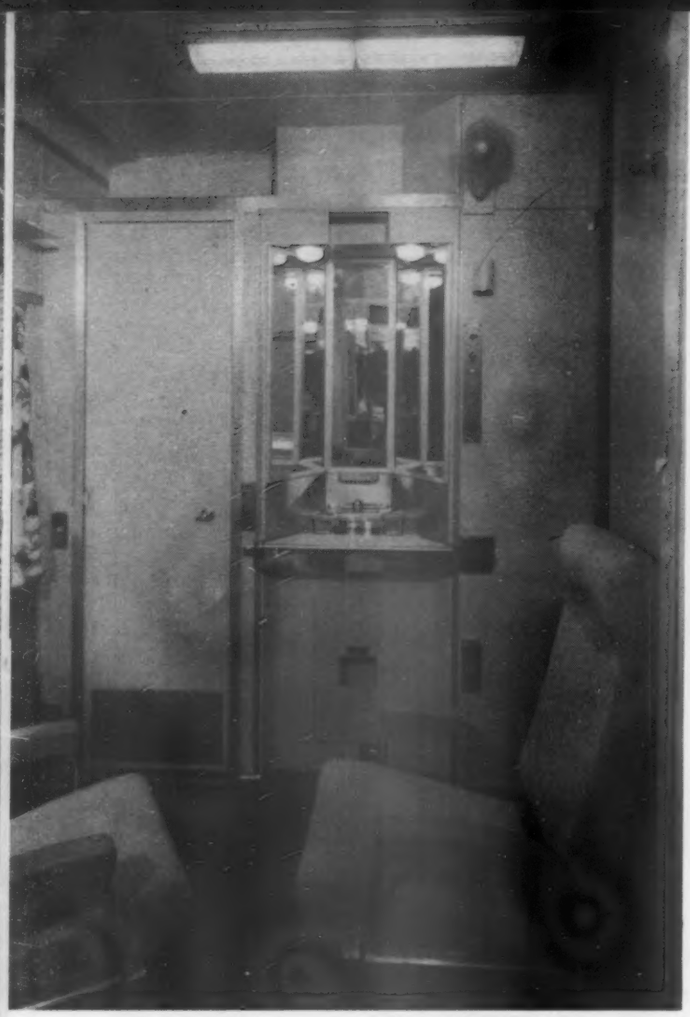
The New York Central was another road which made additions to its punched card equipment in 1950. The new machines have helped to establish procedures for determining repair costs by individual diesel locomotives. This is a step which can mean a lot in the control of locomotive department costs. Also, that road has changed to machine operation the posting of pension records, and has completed the mechanization of its car accounting procedures. Both of these changes required more electric accounting machines. Similarly, the mechanization of the B. & O.'s overcharge claim department required some new equipment, when the department's procedures underwent a face-lifting. This "operation" was performed jointly by the B. & O.'s methods and procedures group and the overcharge claims department. Most of the machine work under the new procedures has been absorbed on equipment used for freight loss and damage claim accounting. As a result of these changes, despite the fact that the 1950 work week was shorter than that of previous years, production was stepped up above that of 1949 and 1948, while 25 per cent fewer man-hours were required to do the work.



During 1950 Remington Rand's collating reproducer was adapted to railroad car accounting work. In one operation it compares the latest car movement report against the last preceding report and prepares a complete audit of the current record. In addition, it automatically determines whether or not an interchange between roads has occurred and punches the required data to permit daily per diem extensions

The coming year promises more substantial benefits to the carriers from the work of the accounting departments in analyzing and applying new techniques in office methods and procedures. Some of the plans announced by several railroads follow:

The Denver & Rio Grande Western will further mechanize its car records by installing a system combining Teletype with the automatic tabulating equipment which now is available; the Chicago, Milwaukee, St. Paul & Pacific is planning to continue mechanization of its car and disbursement accounting, principally in handling shop labor and material distribution; the Southern also expects to mechanize its car accounting, while at the same time conducting a study to determine the best posture chairs for office workers; the Louisville & Nashville will begin the use of the I.B.M. card form of pay draft; the Wabash hopes to extend its photographic plan for handling freight settlements to include movements involving three or more carriers (see *Railway Age* of November 25, 1950, page 27); the New York Central will consolidate and handle mechanically some of its statistical reports and mechanize the handling of rental collection bills; the C.P.R. is going to modernize and put on punch card equipment the preparation of recurring rental bills and the timekeeping for train and engine service employees; and the Baltimore & Ohio is planning improvements in making interline settlements.



Modern lighting and decorations are among the attractive features of the new Pullman sleeping cars

Backlog of Passenger Car Orders Reduced in 1950

By C. B. PECK
Mechanical Editor

and FRED C. MILES
Associate Editor

Orders for 222 passenger-train cars, including 136 for export, were placed in the United States in 1950, according to reports received by *Railway Age*. Among the 86 cars ordered for domestic use, the smallest total since 1942, when 34 were purchased, were 31 rail motor cars, all but one being various types of the Budd Company's new rail diesel car, fifteen of which were among the cars ordered by foreign purchasers. Thirty of the passenger-train cars ordered for domestic use will be built in railroad shops.

The cars ordered last year are listed by purchaser in an accompanying table. Two other tables present analyses and summaries of passenger-train cars ordered and delivered each year from 1920 through 1950. The detailed list of cars ordered was compiled, as in previous years, from reports by purchasers which were checked and amplified with data received from the car builders through the cooperation and assistance of the American Railway Car Institute.

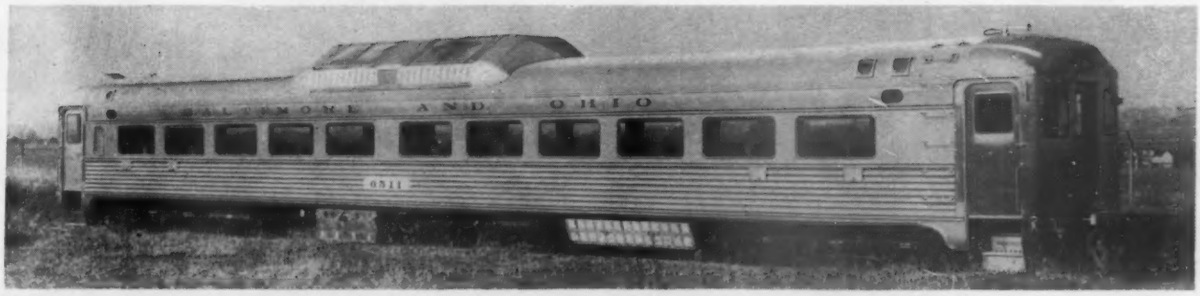
The past year marks the end of the postwar cycle of replacement of passenger-train cars by the railroads. This began in 1944, during which ordering of passenger-train cars was resumed after several years in which no orders were placed. At the end of that year there was a backlog of 1,000 passenger cars on order. Since then, up to December 1, 1950, orders were placed for 3,586 new cars. On December 1, 1950, however, according to the American Railway Car Institute, the backlog of orders was reduced to 184.

Since the end of 1945, when the Class I railroads and Pullman together owned a total of 46,863 passenger-train cars, the total number declined to 43,578 at the end of 1949. Railroad-owned passenger-carrying cars were at a maximum at the end of 1946, when there were 22,741. At the end of 1949 the number of these cars had been reduced to 21,881. Total Class I railroad-owned passenger-train cars were at a maximum at the end of 1948; they then numbered 39,142. At the end of 1949 they had been reduced to 37,771.

During World War II passenger-train cars ceased to be built for railroad or Pullman ownership after 1942 and building was not fully resumed until 1946. In the meantime, however, orders were placed by the War Department for troop sleeping cars, hospital cars, and kitchen cars, amounting to over 3,500.

Passenger-car building for railroad account during 1951 faces two hurdles. First is the insignificant backlog of orders with which the new year begins, accompanied as it is with a sharp decline in orders since 1948. The second is the pressure on the steel market on account of essential defense needs.

In his year-end statement, C. W. Wright, president of the American Railway Car Institute, said that scrapping of special troop sleepers, tourist cars, and some overage coaches and sleepers accounts for a reduction of more than 100,000 sleeping berths and more than 100,000 coach and Pullman seats since the peak of World War II. "This curtailed fleet," said Mr. Wright, "conceivably was adequate for the normal civilian traffic and normal troop movements contemplated when partial mobilization was undertaken last June. Military authorities are now re-examining their requirements in the light of the 'national emergency' program, and new orders for special troop cars or other passenger equipment may be forthcoming in the months immediately ahead."



A Budd Rail Diesel car (above) built for the Baltimore & Ohio. Below—One of 100 air-conditioned multiple-unit commuter cars built by the St. Louis Car Company for New York Central suburban service

Number and Classification of Passenger-Train Cars Delivered for Domestic Use (Carbuilder and Railroad Shops)

Year	Coach	Coach Comb.	Bag. & Exp. #	Sleeping & Comb.	Parlor, Club, etc.	Dining	Postal & Comb.	Other	Troop Hosp.	Troop Sleep.	Troop Kitch.	Total
1950	352	6	60	380	61	43	43	29	0	0	0	964
1949	190	9	16	517	36	125	27	13	0	0	0	933
1948	235	21	25	368	104	115	20	3	0	0	0	891
1947	412	57	119	67	16	117	72	1	0	0	0	861
1946	356	9	59	2	12	9	11	1	0	822	56	1,337
1945	3	0	13	0	0	0	10	0	193	368	344	931
1944	0	0	3	0	0	0	5	0	17	558	420	1,003
1943	0	0	0	3	0	0	4	0	0	652	26	685
1942	111	2	82	157	2	18	22	0	0	0	24	418
1941	201	10	2	49	22	35	20	3	7	0	0	349
1940	69	10	19	117	8	20	14	0	0	0	0	257
1939	98	12	29	80	18	37	2	0	0	0	0	276
1938	136	37	38	156	27	33	5	2	0	0	0	434
1937	299	56	71	33	20	37	10	103	0	0	0	629
1936	84	19	33	27	15	9	2	2	0	0	0	191
1935	107	25	0	0	14	2	1	56	0	0	0	205

#Including express-refrigerator cars.
Source: American Railway Car Institute.

Number and Classification of Passenger-Train Cars Ordered for Domestic Use (Carbuilder and Railroad Shops)

Year	Coach	Coach Comb.	Bag. & Exp.	Exp., Refrig. & Milk	Sleeping & Comb.	Parlor, Club, etc.	Dining	Postal & Comb.	Other	Inter-urban & M. U.	Self. Prop.	Troop Hosp.	Troop Sleep.	Troop Kitch.	Total
1950	17	0	34	0	3	0	0	0	1	0	31	0	0	0	86
1949	46	0	6	0	30	6	14	6	1	0	0	0	0	0	109
1948	143	0	51	0	156	20	25	10	1	100	0	0	0	0	506
1947	132	0	22	0	72	36	19	29	4	0	2	0	0	0	316
1946	311	40	22	0	587	53	143	46	28	8	0	0	0	0	1,238
1945	296	17	134	25	510	84	98	54	67	8	0	100	1,200	400	2,993
1944	461	36	20	0	26	16	53	12	0	1	0	100	0	0	725
1943	14	2	3	0	0	0	4	12	0	0	0	10	1,200	440	1,685
1942	0	1	2	0	0	0	0	0	0	1	0	0	0	30	34
1941	164	13	69	0	197	16	36	46	0	1	0	7	0	0	549
1940	220	26	8	0	53	6	48	13	2	3	0	0	0	0	379
1939	97	20	9	0	125	18	38	12	0	2	0	0	0	0	321
1938	85	28	42	0	86	10	15	10	0	0	2	0	0	0	278
1937	136	23	58	110	171	18	37	8	6	0	0	0	0	0	567
1936	294	36	35	0	5	26	44	10	1	0	0	0	0	0	451
1935	14	16	7	55	18	6	10	7	0	0	0	0	0	0	133
1934	317	38	23	0	8	2	6	20	10	0	5	0	0	0	429
1933	0	2	0	0	3	6	0	1	0	6	1	0	0	0	19
1932	2	1	4	2	1	0	0	4	0	30	0	0	0	0	44
1931	1	10	14	0	1	0	0	9	1	0	1	0	0	0	37
1930	232	56	84	50	68	48	19	43	1	85	14	0	0	0	700
1929	390	98	351	505	490	79	103	184	15	160	8	0	0	0	2,383
1928	436	80	417	930	226	26	64	95	17	50	52	0	0	0	2,393
1927	782	171	271	45	60	80	59	182	16	11	16	0	0	0	1,693
1926	653	115	359	85	446	93	135	77	14	15	68	0	0	0	2,060
1925	663	115	554	90	427	71	109	129	52	0	64	0	0	0	2,274
1924	644	142	372	372	629	75	131	114	9	264	23	0	0	0	2,775
1923	487	49	231	673	374	88	86	124	15	104	1	0	0	0	2,232
1922	1,133	132	318	256	254	42	77	145	9	100	18	0	0	0	2,484
1921	77	11	3	50	100	0	16	8	0	22	0	0	0	0	287
1920	496	28	354	40	468	1	38	37	2	127	0	0	0	0	1.591

Source: 1950—Railway Age; all other—American Railway Car Institute.

The lounge section in one of six six-bedroom-bar-lounge cars built by the American Car & Foundry Co. for Atlantic Coast Line Florida Service

For Service in the United States

Purchaser	No.	Class	Length Ft.	Length In.	Construction	Seating Capacity	Weight	Date of Order	Date of Delivery	Builder
Chicago, Burlington & Quincy	30	Baggage	77	0	Steel	..	108,900	February	1950-51	R. R. Shops
	1	Business Car	85	0	S. Steel	..	148,000	October	.....	Budd
Grand Trunk Western	4	Baggage	73	7	H. T. Steel	..	104,500	September	.....	Amer. Car & Fdy.
Great Northern	1	Sleeping	82	2	Steel	24	135,200	February	Mar. '51	Pullman-Standard
New York, Susquehanna & Western	16	Coach	85	0	S. Steel	133	81,400	November	.....	Budd
Spokane, Portland & Seattle	2	Sleeping	85	0	Steel	..	134,000	1950	1950	Pullman-Standard
	1	Coach	85	0	Steel	48	132,000	1950	1950	Pullman-Standard

Rail Motor Cars

Purchaser	No.	Type of Power	Horsepower	Seating Capacity	Length of Baggage-Mail Room	Weight	Date of Order	Date of Delivery	Builder
Baltimore & Ohio	2	Rail Diesel Car	550	90	.....	112,800	August	December	Budd
Chicago & North Western	2	Rail Diesel Car-1	550	90	.....	113,120	March	May	Budd
	1	Rail Diesel Car-2	550	71	.....	115,140	March	May	Budd
Gulf, Mobile & Ohio	1	Diesel-Elec.	660	.....	Baggage 30 2½ Mail 15 1	106,880	May	.....	Superior-Westinghouse
New York Central	2	Rail Diesel Car	550	89	.....	113,900	January	April	Budd
	1	Rail Diesel Car	550	89	.....	113,900	April	May	Budd
	1	Rail Diesel Car	550	89	.....	113,900	September	December	Budd
	3	Rail Diesel Car	550	89	.....	.....	November	3rd qtr. '51	Budd
New York, Susquehanna & Western	4	Rail Diesel Car	275	92	.....	114,740	October	.....	Budd
Pennsylvania-Reading Seashore	6	Rail Diesel Car	550	89	.....	112,000	May	Sept.-Oct.	Budd
	6	Rail Diesel Car	550	89	.....	112,000	November	.....	Budd
Western Pacific	1	Rail Diesel Car	550	69	17	100,000	January	May	Budd
	1	Rail Diesel Car	550	69	17	100,000	June	July	Budd

Export

Purchaser	No.	Class	Length Ft.	Length In.	Construction	Seating Capacity	Weight	Date of Order	Date of Delivery	Builder
National of Mexico	11	Coach	80	2	Steel	80	.....	June	1951	Pullman-Standard
	11	Coach	80	2	Steel	80	.....	November	1951	Pullman-Standard
Paulista (Brazil)	30	Coach	85	0	Steel	66	.....	September	1951	Pullman-Standard
	6	Parlor	85	0	Steel	24	.....	September	1951	Pullman-Standard
	6	Dining	85	0	Steel	..	.....	September	1951	Pullman-Standard
	6	Bag.-Mail	85	0	Steel	..	.....	September	1951	Pullman-Standard
Sorocabana (Brazil)	6	Baggage	62	4	S. Steel	..	66,000	September	....	Budd
	15	Coach	62	4	S. Steel	60	73,100	September	....	Budd
	15	Coach	62	4	S. Steel	60	71,000	September	....	Budd
	5	Kitchen-Dining	62	4	S. Steel	30	83,000	September	....	Budd
	10	Sleeping	62	4	S. Steel	18	79,000	September	....	Budd

Rail Motor Cars — Export

Purchaser	No.	Type of Power	Horsepower	Seating Capacity	Length of Baggage-Mail Room	Weight	Date of Order	Date of Delivery	Builder
Commonwealth Rys. of Australia	3	Rail Diesel Car	550	90	....	112,800	October	.....	Budd
Consolidated of Cuba	7	Rail Diesel Car	550	90	....	112,800	November	.....	Budd
	5	Rail Diesel Car	550	71	17	113,800	November	.....	Budd

Canada

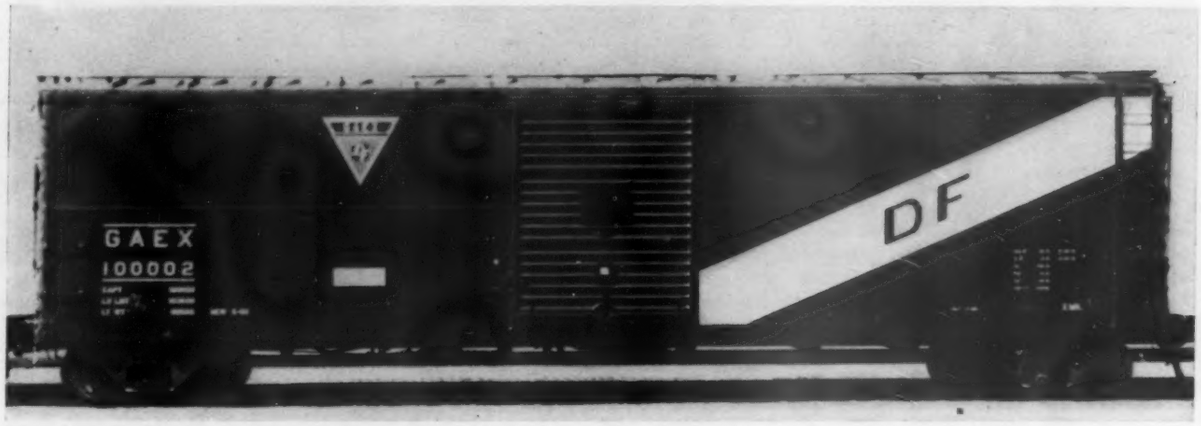
Purchaser	No.	Class	Length Ft.	Length In.	Construction	Seating Capacity	Weight	Date of Order	Date of Delivery	Builder
Canadian National	3	Baggage	59	9½	Steel	..	79,000	March	November	Can. Car & Fdy.
	10	Exp.-Refrig.	36	11½	Steel Frame	..	.....	March	December	Eastern Car
	6	Sleeping	54	6	Steel	37	88,000	July	Nov. '51	Can. Car & Fdy.
	3	Mail	59	9½	Steel	..	.....	October	May-June, '51	Can. Car & Fdy.
	5	Mail-Exp.	73	6	Steel	..	136,000	October	June, '51	National Steel Car
	50	Baggage	73	6	Steel	..	126,000	July	Feb.-May, '51	National Steel Car
	12	M. U. Trailers	58	11½	Steel	84	100,000	June	Dec. '51	Can. Car & Fdy.
	6	M. U. Coach	58	11½	Steel	88	150,000	June	Dec. '51	Can. Car & Fdy.
Canadian Pacific	10	Mail-Exp.	81	0	Steel	..	123,800	March	December	Can. Car & Fdy.
	10	Bagg.-Exp.	81	0	Steel	..	115,800	March	December	Can. Car & Fdy.
	30	Exp.-Refrig.	44	1	Steel	..	70,000	April	December	National Steel Car

FREIGHT-TRAIN CARS ORDERED IN 1950

By C. B. PECK
Mechanical Editor

and FRED C. MILES
Associate Editor

Highest total since 1922; exceeded only three times since 1910; dollar value far exceeds previous record



The General American-Evans "Damage Free" box car leased to the railroads for high-value and high-rated traffic

Orders for 147,066 freight-train cars for domestic use were placed in the United States in 1950, according to reports received by *Railway Age*. This is the largest number of such cars ordered in any single year since 1922, when 178,210 were purchased. The amount of money represented by these orders has never been matched in any previous year. From 1910 through 1950 the number of freight-train cars ordered last year was exceeded only three times: In 1912 (194,353 cars), 1916 (159,376 cars), and 1922. The Equitable Life Assurance Society purchased 19,850 freight cars of various types for lease to railroads during 1950. Other than these, all except 9,712 of the cars ordered last year for service in this country were bought by railroads.

Why More Cars Were Ordered

An accompanying table lists, by individual purchaser, all freight-train cars purchased in the United States in 1950. Two additional tables summarize and analyze deliveries and orders of freight-train cars from 1920 through 1950. The detailed list of orders, compiled from information submitted by the purchasers, was checked and amplified with data received from the car builders through the cooperation and assistance of the American Railway Car Institute.

The causes of the tremendous increase in the number of freight cars ordered last year compared with 1949 are not far to seek. Carloadings, which during the first quarter of the year were considerably lower than those of 1949, equalled 1949 in the second quarter and soared above 1949 during the remainder of the year. The sudden sharp increase in demand for cars at midyear was closely associated with the outbreak of hostilities in Korea. Car shortages became exceedingly disturbing.

From the end of October 1949 to the end of October 1950 Class I ownership declined by over 47,000. Cars awaiting repairs, however, decreased by about 33,700. Indeed, although Class I ownership declined throughout the year, the number of serviceable cars has increased since the end of July. The car-days per turnaround, have also been increased as a result of the 40-hr. week which has affected performance of shippers in loading and unloading and the railroads in handling. The effect of the reduction in working days due to this cause was estimated jointly by Interstate Commerce Commissioner J. Monroe Johnson and President William T. Faricy of the Association of American Railroads as equivalent to the loss of 175,000 cars.

Mr. Knudson's Program

Looking forward to a continuance of an accelerated defense program, I.C. Commissioner James K. Knudson, in his capacity as defense transportation administrator and "claimant" for the transportation agencies before the National Production Authority, has presented a program calling for building 227,400 new freight cars by June 30, 1952. This program calls for the production of more than 10,000 cars per month and

Refrigerator car with mechanical refrigerating and heating system

is to increase Class I car ownership by 76,500 and to provide 31,800 cars for the replacement and expansion of private car-line fleets. This program was established by the N.P.A. in Supplement No. 1 to its Order M-1 which will provide 310,000 tons of steel products per month to car builders and railroad repair shops during the first quarter of 1951.

The ability to build up an output of 10,000 new

Freight-Train Cars Delivered—Domestic and Export 1920-1950

Year	Railroad and Private Line Shops	Car-builders	Total	U. S. Export
1950	19,549	24,443	43,991	218
1949	29,607	62,955	92,562	2,610
1948	29,444	83,196	112,640	2,245
1947	15,532	52,990	68,522	27,721
1946	10,070	31,885	41,995	18,020
1945	12,853	31,011	43,864	10,658
1944	15,050	27,953	43,003	38,759
1943	7,220	24,616	31,836	43,117
1942	15,444	47,429	62,873	8,529
1941	17,227	63,396	80,623	2,386
1940	17,025	45,316	62,341	1,734
1939	5,641	19,491	25,132	381
1938	6,480	9,990	16,470	611
1937	15,569	61,929	77,498	1,321
1936	15,643	30,969	46,612	523
1935	1,550	5,965	7,515	1,263
1934	8,965	16,221	25,176	91
1933	1,300	863	2,163	39
1932	2,770	482	3,252	84
1931	5,706	7,497	13,203	410
1930	9,839	65,081	74,920	1,731
1929	12,878	68,712	81,590	3,448
1928	7,685	38,375	46,060	1,453
1927	8,540	54,830	63,370	467
1926	9,964	78,898	88,862	2,445
1925	11,028	94,707	105,735	3,077
1924	9,618	104,093	113,711	1,584
1923	29,501	146,247	175,748	1,966
1922	2,423	63,866	66,289	1,399
1921	1,033	39,259	40,292	5,351
1920	14,171	46,784	60,955	14,602

Source: American Railway Car Institute.

Number and Classification of Freight-Train Cars Ordered for Domestic Use (Carbuilder and Railroad Shops)

Year	Box	Flat	Stock	Gondola	Hopper	Tank	Refrig.	Others	Non-Rev.	Tota
1950	66,801	3,731	500	33,059	31,105	5,621	5,775	131	343	147,066
1949	2,852	60	0	244	1,131	834	1,050	5	47	6,223
1948	17,140	4,139	500	18,498	40,193	4,236	6,510	881	685	92,782
1947	38,490	636	150	14,877	52,036	6,851	6,200	586	337	120,163
1946	30,500	1,173	0	4,577	15,511	4,825	10,253	153	201	67,193
1945	15,440	1,241	0	5,727	12,960	915	1,085	174	320	37,862
1944	31,066	823	300	6,758	12,674	972	1,465	371	52	54,481
1943	10,027	2,212	0	5,312	18,400	556	50	153	320	37,030
1942	2,351	2,300	0	9,711	10,197	2,716	0	1,285	0	28,560
1941	55,939	3,459	400	15,814	23,213	2,800	2,370	1,614	1,288	106,897
1940	35,530	885	350	9,654	14,446	1,671	785	1,965	542	65,828
1939	20,140	976	100	6,419	21,923	2,373	675	1,127	182	53,915
1938	7,912	931	568	4,279	2,017	230	0	299	134	16,370
1937	20,564	1,365	500	10,120	12,817	692	1,770	287	1,827	49,942
1936	21,866	1,224	453	8,782	22,271	5,745	7,495	100	1,812	69,748
1935	8,925	75	50	2,755	5,970	313	600	32	29	18,749
1934	9,831	1,656	0	2,077	10,460	341	198	0	3	24,566
1933	619	50	0	4	33	269	615	129	1	1,720
1932	1,290	11	0	270	150	52	137	9	32	1,951
1931	2,100	400	750	1,072	3,113	261	2,314	28	159	10,197
1930	17,012	2,046	950	9,900	4,036	2,920	5,689	384	468	43,405
1929	57,139	3,888	2,950	18,289	16,117	4,446	3,583	789	2,940	110,141
1928	21,148	3,709	906	6,495	6,087	2,585	5,568	280	1,376	48,154
1927	28,975	2,694	1,668	13,735	11,835	5,930	4,432	1,067	2,655	72,991
1926	18,277	1,819	2,556	8,366	11,483	4,096	10,109	2,188	2,676	61,570
1925	40,668	2,720	2,749	21,869	6,448	4,701	5,308	802	1,320	86,585
1924	68,282	4,021	6,504	23,603	21,350	3,474	14,347	2,274	1,761	145,616
1923	35,286	2,904	714	16,318	23,883	6,003	6,207	2,448	1,846	95,609
1922	68,767	2,800	4,236	31,742	36,223	5,795	22,587	4,385	1,675	178,210
1921	5,130	292	630	5,427	4,708	327	4,905	1,048	298	22,765
1920	14,470	1,417	3,435	10,080	23,142	15,631	8,785	1,724	1,456	80,140

Source: 1950—Railway Age; all other—American Railway Car Institute.

freight cars a month is dependent on men and orders as well as materials. With these three factors in ample supply, contract car builders alone could turn out that many cars. The backlog of orders as of January 1 was 124,489, of which 35,353 were placed with railroad and private car-line company shops. One danger to the maintenance of manpower in the carbuilding industry will probably come from a reduction in the backlog of orders, such that uneven distribution of orders will compel some shops to suspend production temporarily. With men in great demand, an organization, once scattered, will be extremely difficult to build up again.

C. W. Wright, president of the American Railway Car Institute, in a year-end statement, pointed out that "while N.P.A.'s allocations for the freight car program begin in January, at least 60 to 90 days 'lead time'—for fabrication, procurement of component parts, erection, inspection and shipment—is required before monthly output can reach a corresponding level. In the initial stages of the program, particularly, an even longer lead time may be needed.

"The best estimates now are that it will be April at least, and perhaps May, before freight car deliveries reach the new 10,000 goal."

Railroad Orders—For Service in the United States

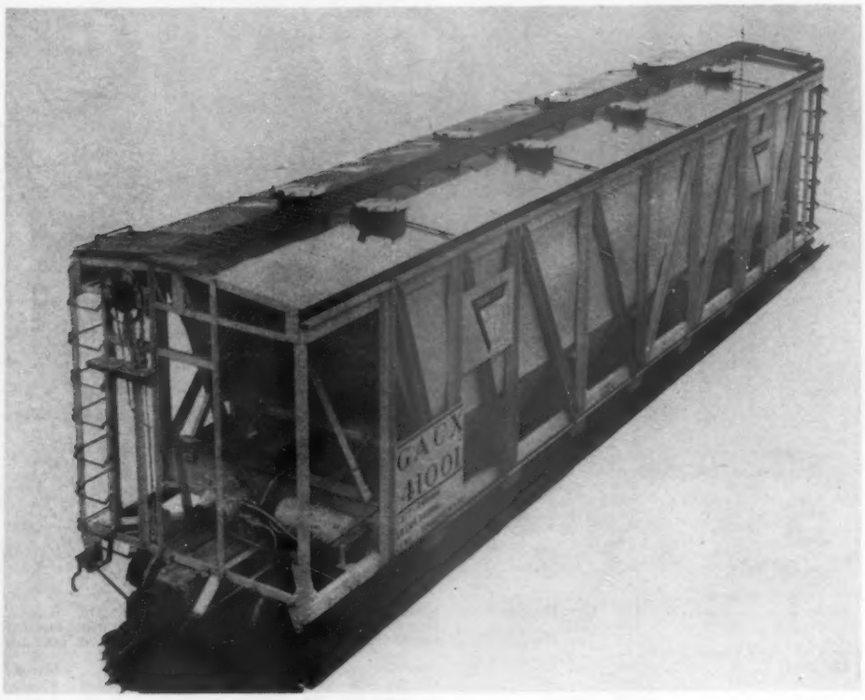
Purchaser	No.	Class	Capacity	Length Ft.	Length In.	Construction	Weight Lb.	Date of Order	Date of Delivery	Builder
Akron, Canton & Youngstown	20	Cov. Hopper	140,000	38	0	Steel	57,400	September	June '51	Greenville Steel Car
	30	Cov. Hopper	140,000	29	3	Steel	51,800	September	June '51	Greenville Steel Car
	150	Box	100,000	40	6	Steel	45,400	September	June'51	Pullman-Standard
Ann Arbor	75	Cov. Hopper	140,000	29	3	Steel	.....	June	October	Pullman-Standard
	100	Box	100,000	40	6	Steel	.....	July	Feb. '51	Amer. Car & Fdy.
Atchison, Topeka & Santa Fe	500	Box	100,000	40	6	Steel	.....	August	Jan. '51	Amer. Car & Fdy.
	1,050	Box	100,000	40	6	Steel	.....	August	1951	R. R. Shops
	700	Box	100,000	50	6	Steel	.....	August	1951	R. R. Shops
	800	Gondola	140,000	52	6¾	Steel	.....	August	1951	Amer. Car & Fdy.
	500	Hopper	140,000	40	8	Steel	.....	August	1951	Pullman-Standard
	200	Flat	140,000	53	6	Steel	.....	August	1951	R. R. Shops
	250	Cov. Hopper	140,000	29	3	Steel	.....	August	1951	R. R. Shops
Atlantic Coast Line	700*	Pulpwood	100,000	45	9	Steel	44,800	March	.....	Pullman-Standard
	500*	Pulpwood	100,000	45	9	Steel	44,800	September	.....	Pullman-Standard
	600*	Cement	140,000	29	3	Steel	50,300	March	.....	Pullman-Standard
	500	Box	100,000	..	..	Steel	47,000	September	.....	Amer. Car & Fdy.
	400	Gondola	100,000	..	..	Steel	43,200	October	.....	Amer. Car & Fdy.
	400	Gondola	100,000	..	..	Steel	43,200	October	.....	Amer. Car & Fdy.
	100	Gondola	140,000	..	..	Steel	57,800	October	.....	Amer. Car & Fdy.
	150	Coal	140,000	..	..	Steel	48,000	October	.....	Greenville Steel Car
	400	Phosphate	140,000	..	..	Steel	49,100	July	.....	Amer. Car & Fdy.
	18	Air Dump	100,000	29	6	Steel	57,000	October	Mar. '51	Magor Car
Baltimore & Ohio	200	Automobile	100,000	50	6	Steel	68,300	July	Jan. '51	Amer. Car & Fdy.
	1,000	Box	100,000	50	6	Steel	59,200	September	Apr. '51	Amer. Car & Fdy.
	1,000	Hopper	100,000	33	0	Steel	40,800	October	June '51	Amer. Car & Fdy.
	1,000	Hopper	100,000	33	0	Steel	40,800	October	Sept. '51	General American
	1,000	Hopper	100,000	33	0	Steel	40,800	October	Jan. '52	Bethlehem Steel
	1,000	Hopper	100,000	33	0	Steel	40,800	October	Jan. '52	Pullman-Standard
	1,000*	Gondola	140,000	52	6	Steel	55,800	September	July '51	Bethlehem Steel
	150	Flat	100,000	53	6	Steel	59,100	October	Jan. '51	R. R. Shops
	150	Flat	140,000	53	6	Steel	61,600	October	Jan. '51	R. R. Shops
Bangor & Aroostook	300*	Box	80,000	40	6	Steel	52,000	May	December	Magor Car
Bessemer & Lake Erie	500	Hopper	180,000	40	5	Steel	61,000	October	1951-52	Pullman-Standard
Birmingham Southern	235	Gondola	140,000	52	6	Steel	56,800	September	July '51	Pullman-Standard
	100	Box	100,000	40	6	Steel	44,600	September	Aug. '51	Pullman-Standard
	100	Hopper	140,000	21	0	Steel	44,500	October	1st qtr. '51	Tennessee Coal, Iron & R. R. Co.
Boston & Maine	750*	Box	100,000	40	6	Steel	45,700	October	Mar.-Apr. '51	Pullman-Standard
Central of Georgia	300	Box	100,000	40	6½	Steel	49,000	November	Nov. '51	Pullman-Standard
	200	Gondola	100,000	41	6	Steel	43,000	November	Nov. '51	Pullman-Standard
	25	Cov. Hopper	140,000	29	3	Steel	53,000	November	Nov. '51	Amer. Car & Fdy.
Central of Pennsylvania	125	Cov. Hopper	140,000	29	6	Steel	53,850	January	May-June	Bethlehem Steel
Central Vermont	2	Air Dump	100,000	29	6	Steel	58,700	August	Jan. '51	Magor Car
Chesapeake & Ohio	2,000	Triple Hopper	140,000	40	8	Steel	51,400	September	Jan. '51	Amer. Car & Fdy.
	1,000	Triple Hopper	140,000	40	8	Steel	51,400	September	May '51	Amer. Car & Fdy.
	1,000	Triple Hopper	140,000	40	8	Steel	52,300	September	December	Bethleham Steel
	1,000	Box	100,000	40	6	Steel	45,000	August	December	Pullman-Standard
	1,000	Box	100,000	40	6	Steel	45,000	October	July '51	Pullman-Standard
Chicago & Eastern Illinois	300	Box	100,000	40	6	Steel	.....	July	1st qtr. '51	R. R. Shops
	200	Box	100,000	40	6	Steel	.....	July	1st qtr. '51	Amer. Car & Fdy.
	200	Box	100,000	40	6	Steel	.....	July	1st qtr. '51	Pullman-Standard
	338	Gondola	110,000	41	1½	Steel	.....	January	October	R. R. Shops
	50	Flat	.....	..	..	....	.....	.....	.....	Thrall Car
	50	Cov. Hopper	.....	..	..	....	.....	.....	.....	Thrall Car
Chicago & North Western	2,000	Box	100,000	40	6	Steel	44,100	September	May-Sept. '51	Pullman-Standard
	17	Cov. Hopper	140,000	29	3	Steel	51,000	October	Feb. '51	Pullman-Standard
Chicago, Burlington & Quincy	1,400	Box	100,000	40	6	Steel	46,000	January	December	R. R. Shops
	600	Hopper	140,000	40	8	Steel	46,500	January	1951	R. R. Shops
	200	Cov. Hopper	140,000	29	3	Steel	51,900	January	1951	R. R. Shops
	1,000	Box	100,000	40	6	Steel	46,000	September	1951	R. R. Shops
	200	Gondola	100,000	52	6	Steel	49,000	September	1951	R. R. Shops
	50	Gondola	140,000	65	6	Steel	60,500	September	1951	R. R. Shops
	400	Flat	100,000	53	6	Steel	49,000	September	1951	R. R. Shops
	200	Cov. Hopper	140,000	29	3	Steel	51,900	September	1951	R. R. Shops
Chicago Great Western	150	Flat	100,000	53	6	Steel	49,000	September	.....	Amer. Car & Fdy.
	300	Gondola	140,000	50	6	Steel	.....	September	1951	Pullman-Standard
	600	Box	100,000	46	6	Steel	.....	September	1951	Pullman-Standard
Chicago Heights Terminal	25	Flat	140,000	53	6	Steel	.....	July	4th qtr.	Thrall Car
	25	Flat	140,000	53	6	Steel	.....	November	2nd qtr. '51	Thrall Car
	25	Cov. Hopper	140,000	29	3	Steel	.....	July	4th qtr.	Thrall Car
	25	Cov. Hopper	140,000	29	3	Steel	.....	November	4th qtr. '51	Thrall Car
Chicago, Indianapolis & Louisville	100	Box	100,000	50	6	Steel	51,300	September	Apr. '51	General American
	1	Caboose	80,000	35	3¾	Steel	50,600	August	May '51	Thrall Car
	101	Gondola	140,000	53	6	Steel Underframe-composite body	64,000	October	May '51	Thrall Car
	50	Flat	100,000	54	1½	Steel Underframe-wood floor	53,100	November	Aug. '51	Greenville Steel Car
Chicago, Milwaukee, St. Paul & Pacific	42	Box	100,000	40	6	Steel	.....	November	1951	Pullman-Standard
	600ǂ	Refrig.	.....	..	..	.....	.....	July	.....	R. R. Shops
	250	Cov. Hopper	.....	..	..	.....	.....	November	Oct. '51	R. R. Shops
	50	Caboose	.....	..	..	.....	.....	November	June '51	R. R. Shops
	30	Gondola	.....	..	..	.....	.....	November	Nov. '51	R. R. Shops

*Leased from the Equitable Life Assurance Society.
ǂUltimate ownership not yet determined.

Purchaser	No.	Class	Capacity	Length Ft.	Length In.	Construction	Weight Lb.	Date of Order	Date of Delivery	Builder
Chicago, Rock Island & Pacific	1,000	Box	100,000	40	6	Steel	45,000	February	1950	Amer. Car & Fdy.
	169	Cov. Hopper	140,000	35	2¾	Steel	50,600	April	Aug.-Sept.	Amer. Car & Fdy.
	500	Flat	100,000	52	6	Steel	50,000	July	1951	R. R. Shops
	350	Box	100,000	50	6	Steel	53,000	September	1st qtr. '51	General American
	500	Gondola	140,000	52	6	Steel-Wood floor	57,000	October	4th qtr. '51	Amer. Car & Fdy.
	2,000	Box	100,000	40	6	Steel	45,000	November	3rd & 4th qtr. '51	Pullman-Standard
	1,000	Box	100,000	40	6	Steel	45,000	November	3rd & 4th qtr. '51	Amer. Car & Fdy.
Clinchfield	40	Cov. Hopper	140,000	29	3	Steel	51,600	November	1951	Amer. Car & Fdy.
Colorado & Southern	250	Box	100,000	40	6	Steel	43,200	February	Dec. '50-Jan. '51	R. R. Shops
	250	Box	100,000	40	6	Steel	43,200	October	1951	R. R. Shops
Columbia, Newberry & Laurens	50	Box	100,000	40	6	Steel	46,000	November	.....	Amer. Car & Fdy.
Cuyhoga Valley	100	Gondola	140,000	40	0	Steel	51,000	November	2nd qtr. '51	Magor Car
Delaware & Hudson	500*	Box	100,000	40	6	Steel	43,500	May	November	Pullman-Standard
	1	Flat	430,000	44	4	Steel	.....	August	December	R. R. Shops
	500*	Box	100,000	40	6	Steel	43,500	November	Feb. '51	Pullman-Standard
	200*	Gondola	140,000	52	6	Steel	55,100	November	June '51	Pullman-Standard
	1,000	Hopper	100,000	33	0	Steel	39,000	September	Oct. '51	Bethlehem Steel
Delaware, Lackawanna & Western	300	Cov. Hopper	100,000	26	4	Steel	49,500	January	June	Amer. Car & Fdy.
	500	Gondola	140,000	52	6	Steel	54,800	August	Apr. '51	Amer. Car & Fdy.
Denver & Rio Grande Western	500	Triple Hopper	140,000	42	8	Steel	47,150	October	Sept. '51	Pressed Steel Car
	25	Cov. Hopper	140,000	29	3	Steel	52,700	September	Aug. '51	Amer. Car & Fdy.
	50	Flat	100,000	53	6	Steel Frame	49,000	October	June '51	R. R. Shops
	10	Caboose	60,000	35	0	Steel	47,900	February	Dec. '50-Mar. '51	R. R. Shops
Detroit & Toledo Shore Line	100	Cov. Hopper	140,000	29	3	Steel	51,800	August	Feb. '51	Greenville Steel Car
	8	Caboose	.....	36	7	Steel	48,200	.....	April	Int'l. Ry. Car
Detroit, Toledo & Ironton	250	Box	100,000	40	6	Steel	48,500	March	Oct., Nov.	Greenville Steel Car
	300	Box	100,000	50	6	Steel	.....	October	Oct. '51	General American
	200	Gondola	140,000	52	6	Steel-Wood floor	.....	October	Oct. '51	Amer. Car & Fdy.
Duluth, Missabe & Iron Range	300	Hopper	140,000	40	8	Steel	.....	September	1951	Pullman-Standard
Elgin, Joliet & Eastern	500	Gondola	100,000	48	6	Steel	53,800	November	Oct.-Dec. '51	Amer. Car & Fdy.
	300	Hopper	100,000	34	9	Steel	56,000	November	Oct.-Dec. '51	Amer. Car & Fdy.
	100	Cov. Hopper	140,000	29	3	Steel	52,700	November	July '51	Amer. Car & Fdy.
	100	Gondola	140,000	65	6	Steel	68,500	November	Oct.-Dec. '51	Greenville Steel Car
Erie	100	Flat	140,000	53	6	Steel	61,800	July	Mar.-Apr. '51	R. R. Shops
	5	Depressed Flat	250,000	57	9	Steel	126,300	July	December	R. R. Shops
	100	Cov. Hopper	140,000	40	2	Steel	65,500	October	July-Sept. '51	R. R. Shops
Ft. Worth & Denver City	250	Box	100,000	40	6	Steel	43,300	March	Jan. '51	R. R. Shops
	250	Box	100,000	40	6	Steel	43,300	August	Nov. '51	R. R. Shops
Georgia	50	Box	100,000	40	6	Steel	46,000	October	Dec. '51	Pullman-Standard
	100	Gondola	100,000	41	6	Steel	.....	October	June '51	Amer. Car & Fdy.
	50	Hopper	140,000	..	..	Steel	.....	October	.....	Greenville Steel Car
Great Northern	3	Well Flat	190,000	52	0	Steel	78,000	June	Mar. '51	R. R. Shops
	250	Gondola	140,000	41	6	Steel	48,600	August	Sept. '51	Amer. Car & Fdy.
	1,000	Box	100,000	40	6	Steel	41,000	October	Dec. '51	R. R. Shops
	100	Cov. Hopper	140,000	29	3	Steel	51,000	November	July '51	Amer. Car & Fdy.
Green Bay & Western	200*	Box	100,000	40	6	Steel	46,000	May	December	Pullman-Standard
Gulf, Mobile & Ohio	100	Cov. Hopper	140,000	29	3	Steel	50,400	February	August	Amer. Car & Fdy.
	200	Box	100,000	50	6	Steel	56,000	June	December	Amer. Car & Fdy.
	700	Box	100,000	40	6	Steel	46,100	December	4th qtr. '51	Amer. Car & Fdy.
	350	Gondola	100,000	41	6	Steel	45,000	December	4th qtr. '51	Pullman-Standard
Illinois Central	9	Dump	30 cu. yd.	29	6	Steel	58,700	July	Jan. '51	Magor Car
	100	Cov. Hopper	140,000	29	3	Steel	52,700	August	May '51	Amer. Car & Fdy.
	1,000	Box	100,000	50	6	Steel	53,000	July	2nd & 3rd qtr. '51	R. R. Shops
	1,000	Gondola	100,000	41	6	Steel	51,000	October	1st half '52	R. R. Shops
Illinois Terminal	10	Box	100,000	40	6	Steel	46,000	October	3rd qtr. '51	Amer. Car & Fdy.
International-Great Northern	10	Caboose	80,000	38	2	Steel	45,700	January	August	R. R. Shops
	25	Pulpwood	100,000	38	0	Steel	.....	.....	November	R. R. Shops
	50	Cov. Hopper	140,000	45	0	Steel	.....	May	December	R. R. Shops
	50	Gondola	140,000	52	6	Steel	.....	June	June '51	R. R. Shops
	250	Gondola	140,000	52	6	Steel	.....	September	July '51	R. R. Shops
	5	Caboose	.....	24	0	Steel	.....	October	Aug. '51	R. R. Shops
Kansas City Southern	600	Gondola	140,000	50	6	Steel	53,000	September	2nd qtr. '51	Pullman-Standard
	400	Box	100,000	40	6	Steel-Wood lined	45,300	September	2nd qtr. '51	Amer. Car & Fdy.
	100	Automobile	100,000	50	6	Steel-Wood lined	60,000	October	2nd qtr. '51	General American
	400	Gondola	100,000	50	6	Steel	.....	December	1952	Pullman-Standard

*Leased from the Equitable Life Assurance Society.

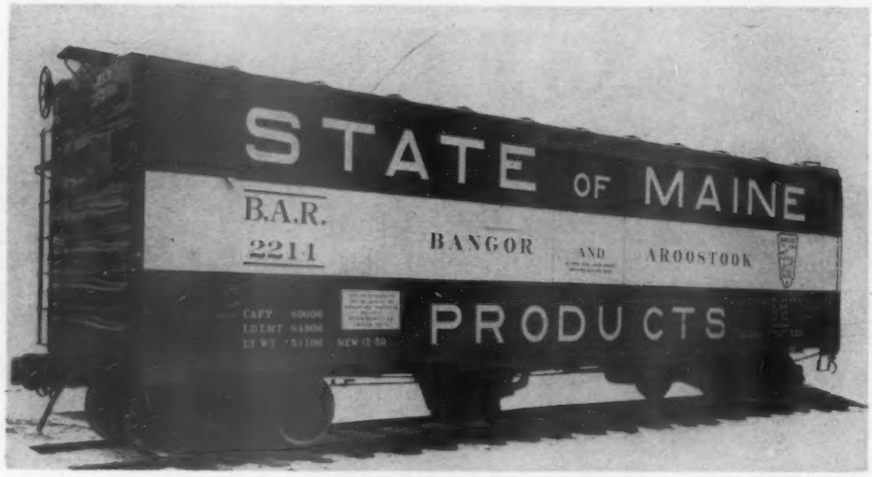
The Unicel cold-wall departs completely from conventional standards of box-car construction



A Trans-Flo covered hopper car for bulk shipment of flour, plastics, and chemicals

Purchaser	No.	Class	Capacity	Length Ft.	Length In.	Construction	Weight Lb.	Date of Order	Date of Delivery	Builder
Lake Superior & Ishpeming	50	Box	100,000	40	6	Steel Frame	44,500	March	October	Pullman-Standard
Lake Terminal	150	Hopper	140,000	40	0	Steel	52,000	October	2nd qtr. '51	Magor Car
	150	Hopper	140,000	33	0	Steel	46,500	October	June '51	Magor Car
Lancaster & Chester	20	Box	100,000	40	6	Steel	.....	September	1951	Pullman-Standard
Lehigh & New England	500	Hopper	100,000	33	0	Steel	39,000	November	Oct. '51	Amer. Car & Fdy.
Lehigh Valley	50	Flat	100,000	..	..	....	.....	February	.....	R. R. Shops
	100	Box	140,000	29	3	Steel	50,700	February	Mid. '50	Bethlehem Steel
	1,000	Box	100,000	40	6	Steel	46,200	March	2nd half '50	Bethlehem Steel
	500	Gondola	140,000	52	6	Steel	56,600	July	Nov.-Dec.	Bethlehem Steel
	500	Box	100,000	40	6	Steel	45,700	March	Sept.-Oct.	Pullman-Standard
Louisville & Nashville	500	Box	100,000	40	6	Steel	45,400	January	Apr.-May	Pullman-Standard
	500	Box	100,000	40	6	Steel	45,400	March	May-June	Pullman-Standard
	1,000	Box	100,000	40	6	Steel	45,400	August	May '51	Pullman-Standard
Maine Central	250	Box	100,000	40	6	Steel	45,700	October	May '51	Pullman-Standard
Minneapolis & St. Louis	700	Box	100,000	40	6	Composite	45,400	November	2nd qtr. '51	General American
	100	Flat	100,000	53	6	Steel	42,400	November	1951	General American
Minneapolis, St. Paul & Sault Ste. Marie	400	Box	100,000	40	6	Steel	46,000	October	3rd qtr. '51	R. R. Shops
	100	Hopper	100,000	34	11	Steel	39,000	November	4th qtr. '51	R. R. Shops
	75	Cov. Hopper	140,000	29	3	Steel	50,700	February	June	Amer. Car & Fdy.
Missouri-Illinois	100	Cov. Hopper	140,000	39	10	Steel	57,500	March	July	R. R. Shops
	100	Cov. Hopper	140,000	39	10	Steel	57,500	October	Mar. '51	R. R. Shops
Missouri-Kansas-Texas	500	Box	100,000	40	6	Steel	44,100	February	May-June	Amer. Car & Fdy.
	100*	Cov. Hopper	140,000	29	3	Steel	50,800	May	Aug.-Sept.	Pullman-Standard
	500	Box	100,000	40	6	Steel	.....	September	2nd qtr. '51	Pressed Steel Car
	300	Gondola	140,000	50	6	Steel	.....	September	2nd qtr. '51	Pullman-Standard
Missouri Pacific	500	Box	100,000	40	6	Steel	46,100	July	November	R. R. Shops
	100	Pulpwood	100,000	38	3	Steel	42,100	November	Apr.-May '51	R. R. Shops
	100	Cov. Hopper	140,000	39	10	Steel	57,500	May	Jan. '51	R. R. Shops
	100	Cov. Hopper	140,000	39	10	Steel	57,500	November	June-July '51	R. R. Shops
	200	Gondola	140,000	52	6	Steel	58,000	November	June '51	R. R. Shops
Montour	300	Hopper	100,000	33	0	Steel	41,700	August	Mar. '51	Greenville Steel Car
Nashville, Chattanooga & St. Louis	650	Box	100,000	40	6	Steel	46,000	October	Oct. '51	Pullman-Standard
	25	Cov. Hopper	140,000	29	3	Steel	53,000	September	June '51	Pullman-Standard
Newburgh & South Shore	100	Gondola	140,000	40	0	Steel	52,000	October	May '51	Magor Car
New Jersey, Indiana & Illinois	100	Box	100,000	50	6	Steel	.....	July	Jan. '51	Amer. Car & Fdy.
New York Central	1,500*	Box	110,000	40	6	Steel	45,000	February	August	Pullman-Standard
	500	Box	110,000	50	6	Steel	52,100	February	October	Despatch Shops
	1,000*	Box	110,000	40	6	Steel	45,000	September	Jan. '51	Pullman-Standard
	1,000*	Box	110,000	40	6	Steel	45,000	September	Mar. '51	Pullman-Standard
	1,000	Box	110,000	40	6	Steel	46,000	October	Oct. '51	Despatch Shops
	500	Box	110,000	50	6	Steel	54,800	October	Feb. '52	Despatch Shops
	500	Box	110,000	50	6	Steel	54,800	September	May '51	Despatch Shops
	500	Gondola	140,000	52	6	Steel	61,500	September	Jan. '51	Despatch Shops
	500	Gondola	140,000	52	6	Steel	61,500	July	Mar. '51	Greenville Steel Car
	500	Gondola	140,000	52	6	Steel	61,500	October	Dec. '51	Greenville Steel Car
	500	Gondola	140,000	52	6	Steel	61,500	October	Nov. '51	Bethlehem Steel
	1,000	Hopper	110,000	31	6	Steel	42,600	September	Jan. '52	Despatch Shops
	500	Hopper	140,000	40	8	Steel	49,900	September	Feb. '52	Despatch Shops
	1,000	Hopper	140,000	40	8	Steel	49,900	October	July '51	General American
	1,000	Hopper	110,000	31	6	Steel	42,600	October	Oct. '51	Amer. Car & Fdy.
	1,000*	Hopper	110,000	31	6	Steel	42,600	.....	Feb. '52	Pullman-Standard
	1	Flat	430,000	44	4	Cast Nickel Steel	115,000	August	December	Despatch Shops
	1	Flat	250,000	35	0	Steel	110,000	July	December	Greenville Steel Car
	2	Transformer	336,000	67	6	Cast Steel	166,000	September	Jan. '51	Despatch Shops

*Leased from the Equitable Life Assurance Society.



Three hundred of these 40-ton combination paper and insulated heater cars were ordered from the Magor Car Corporation by the Bangor & Aroostook for handling newsprint paper and potatoes. The first car was delivered to the B.A.R. October 18, 1950

Purchaser	No.	Class	Capacity	Length Ft.	Length In.	Construction	Weight Lbs.	Date of Order	Date of Delivery	Builder
New York, Chicago & St. Louis	150	Cov. Hopper	140,000	29	3	Steel Frame	51,000	September	Aug. '51	Amer. Car & Fdy.
	150	Flat	140,000	53	6	Steel Frame	61,000	October	Aug. '51	Dispatch Shops
	50	Cov. Hopper	140,000	40	2⅛	Steel Frame	64,000	October	July '51	Greenville Steel Car
New York, New Haven & Hartford	200	Flat	100,000	..	..	....	.....	November	.....	R. R. Shops
Norfolk & Western	1,000	Hopper	140,000	36	9¾	Steel	50,300	February	July '50-Jan. '51	R. R. Shops
	1,000	Hopper	140,000	36	9¾	Steel	50,300	June	Jan.-July '51	R. R. Shops
	1,000	Hopper	140,000	36	9¾	Steel	50,300	September	July-Dec. '51	R. R. Shops
	500	Box	100,000	40	6	Steel	45,400	August	June-July '51	Pullman-Standard
Norfolk Southern	5	Cov. Hopper	140,000	29	3	Steel	52,700	November	July '51	Amer. Car & Fdy.
Northern Pacific	100	Cov. Hopper	140,000	..	..	Steel	52,000	August	Mar. '51	R. R. Shops
	500	Box	100,000	40	6	Steel	45,500	August	July '51	R. R. Shops
	250	Gondola	140,000	41	6	Steel	56,000	September	1951	Amer. Car & Fdy.
	50	Caboose	60,000	30	0	Steel	47,000	1950	1950-51	R. R. Shops
Pennsylvania	2,000*	Gondola	140,000	46	0	Steel	49,800	May	1950-51	Bethlehem Steel
	1,000*	Box	100,000	50	6	Steel	54,000	May	1st qtr. '51	General American
	250	Box	100,000	50	6	Steel	54,000	May	1st qtr. '51	General American
	750	Gondola	140,000	52	6	Steel	55,400	July	2nd qtr. '51	General American
	500	Gondola	140,000	52	6	Steel	55,400	September	2nd qtr. '51	General American
	500*	Box	100,000	40	6	Steel	46,300	May	December	Greenville Steel Car
	2,000*	Box	100,000	40	6	Steel	46,000	May	1950-51	Pressed Steel Car
	1,500*	Box	100,000	40	6	Steel	45,600	May	Feb. '51	Amer. Car & Fdy.
	3,000*	Gondola	140,000	52	6	Steel	55,100	May	Apr. '51	Pullman-Standard
	1,000	Gondola	140,000	52	6	Steel	55,400	July	May. '51	Pullman-Standard
	800	Gondola	140,000	52	6	Steel	55,400	September	1951-52	Pullman-Standard
	1,000	Box	100,000	40	6	Steel	46,000	July	1st half '51	Pressed Steel Car
	1,500	Box	100,000	40	6	Steel	46,000	October	Mid-'51	Pressed Steel Car
	1,200	Gondola	140,000	52	6	Steel	53,500	September	Oct. '51	Amer. Car & Fdy.
	2,000	Gondola	140,000	52	6	Steel	54,300	July	July '51	Amer. Car & Fdy.
	9	Flat	.....	..	..	Steel	200,000	May	.....	R. R. Shops
	1	Flat	.....	..	..	Steel	500,000	May	.....	R. R. Shops
	500	Box	100,000	50	6	Steel	54,900	September	Oct. '51	R. R. Shops
	250	Gondola	140,000	65	6	Steel	62,700	September	July '51	R. R. Shops
	250	Flat	140,000	50	0	Steel	55,200	September	May '51	R. R. Shops
Pittsburgh & Lake Erie	1,000	Box	110,000	40	6	Steel	46,000	February	Jan. '51	Despatch Shops
	1,000	Box	110,000	40	6	Steel	46,000	October	Apr. '51	Despatch Shops
	1,000	Box	110,000	40	6	Steel	46,000	October	Jan. '52	Despatch Shops
	1,500	Gondola	140,000	52	6	Steel	61,500	February	December	Despatch Shops
	500	Gondola	140,000	52	6	Steel	61,500	July	June '51	Despatch Shops
	500	Gondola	140,000	52	6	Steel	61,500	October	Jan. '52	Bethlehem Steel
Reading	1,000	Hopper	110,000	33	0	Steel	39,200	April	July-Sept.	Bethlehem Steel
	500	Box	100,000	40	6	Welded Steel	45,200	April	Aug.-Sept.-Oct.	Amer. Car & Fdy.
	500	Gondola	140,000	52	6	Steel-Wood floor	56,600	August	July '51	Bethlehem Steel
	1,000	Hopper	110,000	33	0	Steel	39,200	July	Mar. '51	Bethlehem Steel
Roscoe, Snyder & Pacific	1	Bag.-Exp.-Caboose	80,000	36	7¼	Steel	48,000	.....	April	Int'l. Ry. Car
St. Louis & Belleville Electric	50	Triple Hopper	140,000	40	6	Steel	52,000	August	.....	Amer. Car & Fdy.
St. Louis, Brownsville & Mexico	10	Caboose	80,000	38	2	Steel	45,800	January	August	R. R. Shops
	25	Pulpwood	100,000	38	0	Steel	.....	June	November	R. R. Shops
	50	Cov. Hopper	140,000	45	0	Steel	.....	May	December	R. R. Shops
	50	Gondola	140,000	52	6	Steel	.....	June	May '51	R. R. Shops
	250	Gondola	140,000	52	6	Steel	.....	September	Aug. '51	R. R. Shops
	5	Caboose	80,000	24	0	Steel	.....	October	Aug. '51	R. R. Shops
St. Louis-San Francisco	40	Cov. Hopper	140,000	29	3	Steel	50,300	January	February	Pullman-Standard
	95	Cov. Hopper	140,000	29	3	Steel	50,300	May	October	Pullman-Standard
	100	Flat	100,000	42	6	Steel	39,000	July	Mar. '51	Amer. Car & Fdy.
	500	Box	100,000	40	6	Steel	45,400	July	Mar. '51	Pullman-Standard
	200	Gondola	100,000	41	6	Steel	42,000	September	June '51	Pressed Steel Car
St. Louis-Southwestern	100	Box	100,000	40	6	Steel	45,000	November	June '51	Pullman-Standard
	25	Cov. Hopper	140,000	29	3	Steel	50,700	1950	.....	Amer. Car & Fdy.
	50	Cov. Hopper	140,000	39	10	Steel	57,300	1950	.....	Amer. Car & Fdy.
	75	Box	100,000	50	6	Steel	.....	November	3rd qtr. '51	General American
	100	Box	100,000	40	6	Steel	.....	November	1951	Pullman-Standard
Seaboard Air Line	300	Phosphate	140,000	34	9	Steel	49,600	February	Sept.-Oct.	Pullman-Standard
	200	Phosphate	140,000	34	9	Steel	49,600	April	Nov.-Dec.	Pullman-Standard
	100	Phosphate	140,000	34	9	Steel	49,600	July	Mar.-Apr. '51	Pullman-Standard
	200	Cov. Hopper	140,000	29	3	Steel	49,500	July	Feb. '51	Pullman-Standard
	200	Gondola	100,000	41	6	Steel	40,200	July	Mar. '51	Bethlehem Steel
	200	Gondola	100,000	41	6	Steel	38,500	July	Apr. '51	Bethlehem Steel
	25	Caboose	60,000	30	0	Steel	48,300	July	Mar. '51	Int'l. Ry. Car
	500	Box	100,000	40	6	Steel	45,000	July	Apr. '51	Pullman-Standard
	500	Box	100,000	40	6	Steel	45,000	November	Sept. '51	Pullman-Standard
	300	Gondola	100,000	41	6	Steel	40,200	November	Apr. '51	Bethlehem Steel
	300	Hopper	140,000	40	8	Steel	45,500	November	May '51	Bethlehem Steel
	25	Caboose	.....	..	..	....	.....	November	.....	R. R. Shops

*Leased from the Equitable Life Assurance Society

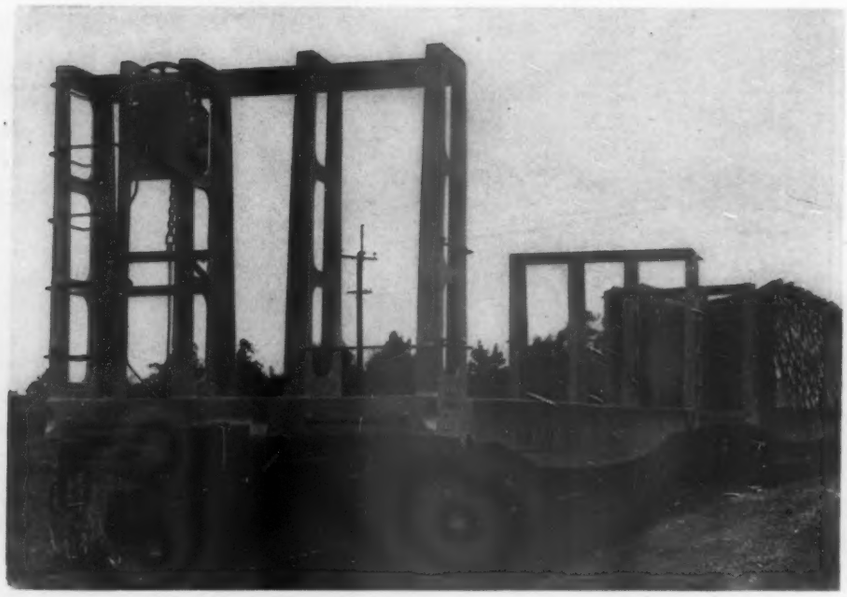
Purchaser	No.	Class	Capacity	Length Ft.	Length In.	Construction	Weight Lb.	Date of Order	Date of Delivery	Builder
Southern	200	Cov. Hopper	140,000	29	3	Steel	51,000	June	Jan.-Feb. '51	Pullman-Standard
	50	Cov. Hopper	140,000	40	2	Steel	.....	June	Mar. '51	Pullman-Standard
	2,000	Box	100,000	40	6	Steel	.....	August	June-Sept. '51	Pullman-Standard
Southern Pacific	2,000	Box	100,000	40	6	Steel	44,100	February	2nd half '50	Pullman-Standard
	100	Gondola	140,000	65	6	Steel	59,800	February	June-July	Ralston Steel Car
	1,000	Automobile	100,000	50	6	Steel	55,200	February	1950-51	R. R. Shops
	500	Automobile	100,000	50	6	Steel	60,300	August	1951	R. R. Shops
	50	Caboose	60,000	32	0	Steel	43,800	September	1951	R. R. Shops
	1,000	Gondola	100,000	41	6	Composite	40,900	August	Mid-'51	R. R. Shops
	500	Box	100,000	40	6	Steel	44,100	August	3rd qtr. '51	R. R. Shops
	1,000	Box	100,000	40	6	Steel	44,100	September	1st qtr. '51	Pullman-Standard
	1,500	Box	100,000	40	6	Steel	44,100	September	Mid-'51	Pullman-Standard
	250	Cov. Hopper	140,000	29	3	Steel	53,300	September	2nd qtr. '51	Amer. Car & Fdy.
	100	Ballast	140,000	31	0	Steel	48,300	September	Aug. '51	Amer. Car & Fdy.
	50	Gondola	140,000	52	6	Steel	56,000	September	Aug. '51	Amer. Car & Fdy.
	50	Gondola	140,000	52	6	Steel	53,000	September	Aug. '51	Amer. Car & Fdy.
Spokane International	23	Cov. Hopper	140,000	29	3	Steel	54,000	April	August	Amer. Car & Fdy.
	75	Flat	100,000	42	6	Steel Frame	40,000	August	1st qtr. '51	Amer. Car & Fdy.
Spokane, Portland & Seattle	200	Flat	100,000	52	0	Steel Frame	46,000	August	July '51	Pacific Car & Fdy.
	200	Gondola	140,000	41	6	Steel Frame	52,000	August	July '51	Amer. Car & Fdy.
	12	Caboose	.....	40	0	Steel Frame	38,000	April	July '51	R. R. Shops
Texas & Pacific	100	Cov. Hopper	140,000	39	10	Steel	57,300	October	.....	Amer. Car & Fdy.
	250	Triple Hopper	140,000	40	6	Steel	51,500	October	.....	Amer. Car & Fdy.
	200	Box	100,000	40	6	Steel	44,800	October	3rd qtr. '51	Pressed Steel Car
	100	Flat	100,000	..	..	Steel	.....	October	.....	R. R. Shops
	150	Gondola	140,000	..	..	Steel	.....	October	.....	R. R. Shops
Union Pacific	1,000	Gondola	100,000	41	0	Steel	.....	January	1st half '50	General American
	2,500	Box	100,000	40	6	Steel	.....	February	2nd half '50	R. R. Shops
	500	Stock	80,000	40	6	Steel	.....	February	2nd half '50	R. R. Shops
	1,000	Box	100,000	40	6	Steel	.....	July	1st half '51	Amer. Car & Fdy.
	1,000	Gondola	100,000	41	0	Steel	.....	July	1st half '51	General American
	1,000	Box	100,000	40	6	Steel	.....	August	1st half '51	R. R. Shops
	500	Flat	100,000	42	6	Steel	.....	August	1st half '51	R. R. Shops
Union	500	Gondola	140,000	42	0	Steel	51,700	October	3rd & 4th qtr. '51	Greenville Steel Car
Wabash	300	Box	100,000	40	6	Steel	.....	July	1951	R. R. Shops
	200	Box	100,000	50	6	Steel	.....	July	1951	R. R. Shops
	1	Depressed Center Car	250,000	..	..	Steel	.....	August	December	R. R. Shops
	50	Gondola	140,000	52	6	Steel	.....	October	Aug. '51	Amer. Car & Fdy.
	20	Caboose	.....	28	5½	Steel	.....	December	1951	R. R. Shops
Western Maryland	100	Cov. Hopper	140,000	29	3	Steel	52,700	August	Apr. '51	Amer. Car & Fdy.
	410	Gondola	140,000	52	6	Steel	.....	August	Sept. '51	Bethlehem Steel
	100	Box	100,000	40	6	Steel	47,300	August	June '51	Greenville Steel Car
	40	Flat	140,000	53	6	Steel	62,800	September	June '51	Greenville Steel Car
	50	Box	100,000	40	6	Steel	.....	August	Apr. '51	Pressed Steel Car
Western Pacific	600	Box	100,000	40	6	Steel Frame	42,000	November	Sept. '51	Pullman-Standard
Western of Alabama	110	Box	100,000	40	6	Steel	46,000	September	Dec. '51	Pullman-Standard
Youngstown & Northern	150	Gondola	140,000	42	6	Steel	57,000	October	3rd qtr. '51	Greenville Steel Car

Private Car Lines and Other Orders—For Service in the United States

Purchaser	No.	Class	Capacity	Length Ft.	Length In.	Construction	Weight Lb.	Date of Order	Date of Delivery	Builder
Allied Chemical & Dye Corp.:										
Barrett Division	3	Tank	10,000g.	34	1¼	Steel	59,500	July	.....	Amer. Car & Fdy.
	25	Tank	11,000g.	35	2⅞	Steel	67,300	November	.....	Amer. Car & Fdy.
	98	Tank	10,000g.	..	..	.....	.....	May	December	General American
Solvay Process Division	110	Tank	8,000g.	..	..	.....	.....	June	June '51	General American
	165	Tank	10,000g.	..	..	.....	.....	June	Mar. '51	General American
American Agricultural Chemical Co.	1	Tank	7,000g.	29	8⅛	Steel	41,000	March	August	Amer. Car & Fdy.
	1	Tank	9,750g.	33	5⅜	Steel	49,600	September	.....	Amer. Car & Fdy.
American Refrigerator Transit Co.	500	Refrig.	80,000	41	0	Steel	.....	September	.....	Co. Shops
American Smelting & Refining Co.	10	Cov. Hopper	140,000	29	3	Steel	50,700	November	.....	Amer. Car & Fdy.
Anheuser Busch	1	Cov. Hopper	140,000	39	10	Steel	57,300	November	.....	Amer. Car & Fdy.
Atlas Powder Co.	1	Tank	8,000g.	..	..	.....	.....	April	September	General American
	2	Tank	8,000g.	..	..	.....	.....	July	Jan. '51	General American
	1	Tank	10,000g.	..	..	.....	.....	September	Mar. '51	General American
J. T. Baker Chemical Co.	1	Tank	8,000g.	33	7⅜	Steel	45,100	June	.....	Amer. Car & Fdy.
E. Berghausen Chemical Co.	1	Tank	8,000g.	33	8⅝	Steel	49,700	January	May	Amer. Car & Fdy.
Best Foods	25	Tank	8,000g.	33	8⅝	Steel	42,500	August	.....	Amer. Car & Fdy.
	25	Tank	8,000g.	..	..	.....	.....	September	July '51	General American
Bethlehem Steel Co.	62	Slab	150,000	36	0	Steel	64,100	May	November	Bethlehem Steel
Buffalo Electro-Chemical Co.	3	Tank	4,000g.	..	..	.....	.....	May	December	General American
	3	Tank	8,000g.	..	..	.....	.....	October	July '51	General American
	2	Tank	4,000g.	..	..	.....	.....	November	Sept. '51	General American
Burlington Refrigerator Express	365	Refrig.	100,000	40	0	Steel	.....	October	1951	Co. Shops
Godfrey L. Cabot, Inc.	15	Hopper	100,000	45	10	Steel	51,000	November	July '51	Magor Car
California Dispatch Line	15	Tank	8,000g.	33	8⅝	Steel	.....	April	October	Amer. Car & Fdy.
Central Soya Co.	20	Cov. Hopper	140,000	29	3	Steel	52,600	August	.....	Amer. Car & Fdy.
Cliffs Dow Chemical Co.	3	Tank	8,000g.	..	..	.....	.....	May	November	General American
Columbian Carbon Co.	25	Hopper	100,000	45	10	Steel	51,000	November	July '51	Magor Car
Conservation Gas Corp.	10	Tank	11,000g.	35	2	Steel	67,300	July	.....	Amer. Car & Fdy.
Consolidated Chemical Industries	10	Tank	9,750g.	33	6	Steel	53,800	March	November	Amer. Car & Fdy.
	25	Tank	9,850g.	..	..	.....	.....	October	Sept. '51	General American
Dow Chemical Co.	1	Tank	2,300g.	..	..	.....	.....	September	Aug. '51	General American
	10	Tank	8,000g.	..	..	.....	.....	November	June '51	General American
Eastern Gas & Fuel Assoc.	3	Gondola	140,000	34	8	Steel	55,800	August	May '51	Greenville Steel Car
El Paso Natural Gas Corp.	4	Tank	10,500g.	..	..	.....	.....	June	Jan. '51	General American
Ethyl Corp.	42	Tank	6,000g.	30	9½	Steel	60,200	March-May	October	Amer. Car & Fdy.
	15	Tank	6,000g.	..	..	.....	.....	August	Apr. '51	General American
Fruit Growers' Express	100	Refrig.	140,000	50	0	Steel	83,500	March	Aug.-Oct.	Co. Shops
	100	Refrig.	140,000	50	0	Steel	83,500	October	Jan.-Mar. '51	Co. Shops
	1,000	Refrig.	100,000	40	0	Steel	63,400	July	Jan.-May '51	Pac. Car & Fdy.
General American Transportation Corp.	11	Cov. Hopper	140,000	29	3	Steel	50,600	June	September	Amer. Car & Fdy.
General Steel Co.	34	Gondola	140,000	40	0	Steel	62,600	November	Oct. '51	Greenville Steel Car
Great Lakes Steel Co.	8	Gondola	140,000	40	0	Steel	59,500	September	May '51	Greenville Steel Car
Hooker Electro-chemical Co.	22	Tank	10,650g.	37	4	Steel	85,200	Feb.-June-Oct.	.....	Amer. Car & Fdy.
J. M. Huber Corp.	15	Hopper	100,000	45	10	Steel	51,000	November	July '51	Magor Car
Inland Steel Co.	50	Gondola	140,000	42	0	Steel	71,800	November	1st qtr. '51	General American

Purchaser	No.	Class	Capacity	Length Ft.	Length In.	Construction	Weight Lbs.	Date of Order	Date of Delivery	Builder
Jordan Co.	3	Tank	8,000g.	34	2¾	Steel	45,400	September	.....	Amer. Car & Fdy.
Koppers Co.	30	Tank	8,000g.	33	8⅝	Steel	41,000	September	.....	Amer. Car & Fdy.
	23	Tank	10,000g.	34	1¼	Steel	45,400	September	.....	Amer. Car & Fdy.
	7	Tank	6,000g.	..	..	.....	.....	October	Aug. '51	General American
	70	Tank	8,000g.	..	..	.....	.....	October	May '51	General American
	210	Tank	10,000g.	..	..	.....	.....	October	July '51	General American
	25	Tank	12,500g.	..	..	.....	.....	October	Sept. '51	General American
Lion Oil Co.	2	Tank	7,990g.	35	2⅞	Steel	43,300	February	August	Amer. Car & Fdy.
	25	Tank	10,000g.	..	..	.....	.....	April	October	General American
	10	Tank	10,200g.	..	..	.....	.....	September	July '51	General American
Mississippi Chemical Corp.	6	Tank	11,000g.	35	2	Steel	67,300	August	.....	Amer. Car & Fdy.
Monsanto Chemical Co.	1	Tank	4,000g.	25	11	Nickel	43,800	March	.....	Amer. Car & Fdy.
	2	Tank	10,000g.	34	1¼	Steel	59,500	March	.....	Amer. Car & Fdy.
	3	Tank	7,000g.	..	..	.....	.....	February	August	General American
North American Car Corp.	50	Cov. Hopper	140,000	29	3	Steel	51,800	September	Mar. '51	Greenville Steel Car
	30	Cov. Hopper	140,000	29	3	Steel	51,100	June	October	Pullman-Standard
	3	Cov. Hopper	140,000	29	3	Steel	.....	October	1951	Pullman-Standard
Oldbury Electro-Chemical Co.	1	Tank	4,000g.	..	..	.....	.....	May	September	General American
Pacific Fruit Express	2,000	Refrig.	80,000	33	2¾	Steel Frame	56,000	October	1951-'52	Co. Shops
	100	Refrig.	.....	..	..	.....	.....	October	.....	Co. Shops
Panoma Corp.	75	Tank	11,000g.	35	2⅞	Steel	64,400	November	.....	Amer. Car & Fdy.
Rural Natural Gas Co.	8	Tank	11,000g.	35	2⅞	Steel	67,300	July	.....	Amer. Car & Fdy.
Shamrock Oil & Gas Co.	25	Tank	10,500g.	..	..	.....	.....	March	August	General American
	25	Tank	10,500g.	..	..	.....	.....	July	Mar. '51	General American
	25	Tank	10,500g.	..	..	.....	.....	November	Oct. '51	General American
Shippers' Car Line Corp.	3	Cov. Hopper	140,000	29	3	Steel	50,300	March	September	Amer. Car & Fdy.
	5	Tank	9,970g.	33	5¼	Steel	62,000	March	June	Amer. Car & Fdy.
	1	Tank	8,000g.	34	1¼	Steel	51,200	April	August	Amer. Car & Fdy.
	28	Tank	.....	30	7	Steel	61,000	1st qtr.	August	Amer. Car & Fdy.
	2	Tank	7,950g.	33	6¼	Steel	43,900	May	.....	Amer. Car & Fdy.
	7	Tank	8,000g.	33	9⅞	Steel	55,000	June	.....	Amer. Car & Fdy.
	4	Tank	8,000g.	33	10⅛	Steel	50,500	June	.....	Amer. Car & Fdy.
	2	Tank	4,000g.	26	0	Steel	38,700	June	.....	Amer. Car & Fdy.
	50	Tank	.....	37	4	Steel	86,500	Midyear	.....	Amer. Car & Fdy.
	7	M. U. Tank	80,000	42	2¾	Steel	34,000	July	September	Amer. Car & Fdy.
	10	M. U. Tank	80,000	42	2¾	Steel	33,933	July	October	Amer. Car & Fdy.
	10	Tank	4,000g.	26	0	Steel	38,700	July	.....	Amer. Car & Fdy.
	1	Tank	4,000g.	28	0	Steel	43,800	July	.....	Amer. Car & Fdy.
	62	Tank	10,000g.	33	5¼	Steel	63,900	July	.....	Amer. Car & Fdy.
	30	Cov. Hopper	.....	35	9¾	Steel	49,100	August	.....	Amer. Car & Fdy.
	70	Cov. Hopper	140,000	29	3	Steel	50,700	August	.....	Amer. Car & Fdy.
	100	Tank	11,000g.	35	2⅞	Steel	65,700	August	.....	Amer. Car & Fdy.
	10	Tank	.....	37	4	Steel	86,500	October	November	Amer. Car & Fdy.
	25	Tank	11,000g.	35	2⅞	Steel	78,500	November	.....	Amer. Car & Fdy.
	20	Tank	8,000g.	33	8⅝	Steel	41,000	November	.....	Amer. Car & Fdy.
	20	Tank	10,000g.	34	1¼	Steel	47,000	November	.....	Amer. Car & Fdy.
	400	Tank	8,000g.	33	8⅝	Steel	41,000	November	.....	Amer. Car & Fdy.
	200	Tank	10,000g.	34	1¼	Steel	45,400	November	.....	Amer. Car & Fdy.
	200	Tank	11,000g.	35	2⅞	Steel	67,300	November	.....	Amer. Car & Fdy.
Spencer Chemical Co.	30	Tank	8,000g.	33	11	Steel	43,100	October	.....	Amer. Car & Fdy.
	35	Tank	8,000g.	..	..	.....	.....	November	Dec. '51	General American
Stein, Jacob & Sons	7	Tank	8,000g.	33	8⅝	Steel	41,800	April	September	Amer. Car & Fdy.
	3	Tank	12,000g.	36	7	Steel	51,600	April	.....	Amer. Car & Fdy
Suburban Fuel Tank Co.	30	Tank	11,000g.	35	2⅞	Steel	66,100	October	.....	Amer. Car & Fdy
Sunray Oil Corp.	200	Tank	11,000g.	35	2	Steel	67,300	August	.....	Amer. Car & Fdy.
Texas Natural Gasoline Corp.	50	Tank	11,000g.	35	2⅞	Steel	64,400	August	.....	Amer. Car & Fdy.
Union Tank Car Co.	250	Tank	100,000	..	..	.....	70,000	July	September	Co. Shops
	500	Tank	100,000	..	..	.....	49,000	August	1951	Amer. Car & Fdy.
	500	Tank	100,000	..	..	.....	51,000	August	1951	Amer. Car & Fdy.
	500	Tank	100,000	..	..	.....	70,000	September	1951	Co. Shops
United States Army	2	Tank	10,000g.	33	7⅛	Steel	46,000	January	February	Amer. Car & Fdy.
	88	Flat	100,000	53	6	Steel	48,900	August	.....	Amer. Car & Fdy.
	6	Flat	160,000	46	8	Steel	70,900	September	.....	Amer. Car & Fdy.
	100	Box	100,000	40	6	Steel	43,700	June	December	Pullman-Standard
	194	Box	100,000	40	6	Steel	.....	September	.....	Pullman-Standard
Warren Maritime Corp.	200	Tank	11,000g.	35	2⅞	Steel	65,100	June	.....	Amer. Car & Fdy.
	600	Tank	11,000g.	35	2	Steel	66,800	Sept.-Oct.	.....	Amer. Car & Fdy.
	350	Tank	8,000g.	33	8⅝	Steel	49,600	October	.....	Amer. Car & Fdy.
West End Chemical	8	Cov. Hopper	140,000	29	3	Steel	50,700	October	.....	Amer. Car & Fdy.
West India Fruit & Steamship Co.	150	Box	100,000	40	6	Steel	45,000	September	.....	Amer. Car & Fdy.
Western Fruit Express Co.	460	Refrig.	100,000	33	2¾	Steel Underframe	57,300	January	June	Pac. Car & Fdy.
	50	Refrig.	140,000	50	0	Steel	83,500	March	Aug.-Oct.	Co. Shops
	400	Refrig.	100,000	40	0	Steel	63,400	October	May-June '51	Pac. Car & Fdy.
Wilson Car Lines	100	Refrig.	80,000	36	0	Steel Frame	54,800	March	June '51	Co. Shops

Fleets of new freight cars were put in service during 1950, but even larger numbers of worn-out equipment were retired



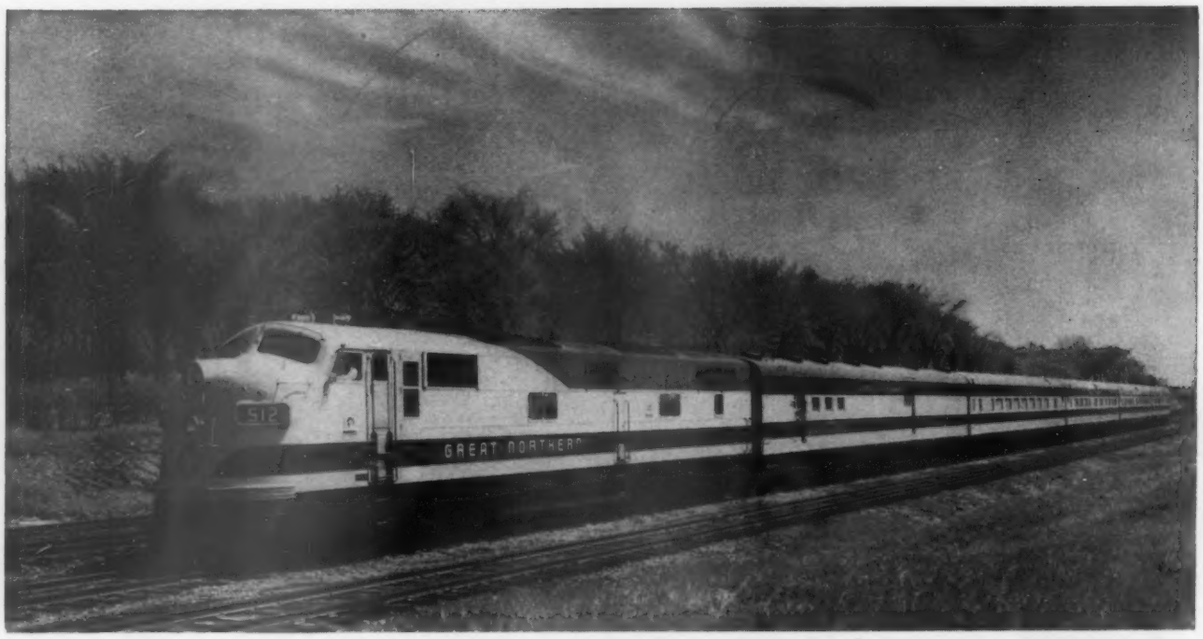
G.M. & O. cast-steel pulpwood cars with inward sloping and slatted floors

United States—Export

Purchaser	No.	Class	Capacity	Length Ft.	Length In.	Construction	Weight Lb.	Date of Order	Date of Delivery	Builder
Socony-Vacuum Oil Co., (For Brazil)	1	Tank	10,500g.	..	..	.....	.....	June	December	General American
Standard Oil Co. of N. J., (For Guatemala)	3	Tank	7,500g.	33	4¼	Steel	33,100	September	.....	Amer. Car & Fdy.

Canada

Purchaser	No.	Class	Capacity	Length Ft.	Length In.	Construction	Weight Lb.	Date of Order	Date of Delivery	Builder
Algoma Steel Corp.	2	Hot Metal	.....	16	8	Steel	159,800	May	Jan. '51	Can. Car & Fdy.
Canadian General Transit Co.	3	Tank	8,000 U.S.g.	33	10½	Steel	57,600	February	August	Can. Car & Fdy.
	5	Tank	8,000 U.S.g.	34	8	Steel	45,900	March	August	Can. Car & Fdy.
	8	Tank	60,000	30	3	Steel	62,000	June	Jan. '51	Can. Car & Fdy.
	7	Tank	110,000	30	3	Steel	88,000	June	December	Can. Car & Fdy.
	3	Tank	10,000 U.S.g.	34	0	Steel	53,000	June	Jan. '51	Can. Car & Fdy.
	2	Tank	8,000 U.S.g.	33	10½	Steel	50,000	June	Jan. '51	Can. Car & Fdy.
	2	Tank	.....	34	5½	Steel	64,000	July	Feb. '51	Can. Car & Fdy.
	15	Tank	10,000 U.S.g.	34	5	Steel	63,000	September	June '51	Can. Car & Fdy.
	7	Tank	8,000 U.S.g.	33	10½	Steel	57,600	September	May '51	Can. Car & Fdy.
	4	Tank	10,000 U.S.g.	34	5	Steel	64,000	September	June '51	Can. Car & Fdy.
	6	Tank	10,000 U.S.g.	34	0	Steel	53,000	October	.....	Can. Car & Fdy.
	8	Tank	8,000 U.S.g.	33	10½	Steel	50,000	October	.....	Can. Car & Fdy.
	8	Tank	7,000 U.S.g.	29	7	Steel	47,000	October	.....	Can. Car & Fdy.
	1	Tank	6,000 U.S.g.	29	5⅝	Steel	.....	November	.....	Can. Car & Fdy.
	1	Tank	4,000 U.S.g.	28	9⅞	Steel	.....	November	.....	Can. Car & Fdy.
Canadian National	25	Automobile	60,000	40	0	Steel Frame	.....	March	November	Eastern Car
	60	Box	60,000	36	0	Steel Frame	.....	May	Nov.-Dec.	Eastern Car
	100	Cov. Hopper	140,000	36	0	Steel	.....	July	May '51	Can. Car & Fdy.
	3	Depressed Flat	270,000	59	9	Steel	.....	June	Nov.-Dec.	Can. Car & Fdy.
	100	Longitudinal Hopper	270,000	40	8	Steel	.....	May	Sept.-Oct.	National Steel Car
	2,000	Box	100,000	40	6	Steel	.....	September	1st qtr. '51	Can. Car & Fdy.
	1,500	Box	100,000	40	6	Steel	.....	September	1st qtr. '51	National Steel Car
	1,500	Box	100,000	40	6	Steel	.....	September	Mar.'51	Eastern Car
	10	Refrig.	50,000	29	5½	Steel Frame	45,600	March	December	Eastern Car
	28	Air Dump	.....	..	..	Steel	62,900	June	Jan. '51	Eastern Car
	20	Air Dump	.....	..	..	Steel	41,000	November	June '51	Eastern Car
	40	Box	60,000	35	10¾	Steel Frame	32,600	November	.....	Eastern Car
Canadian Pacific	200	Box	100,000	40	6	Steel	44,200	March	November	Eastern Car
	300	Box	100,000	40	6	Steel	44,200	March	September	Can. Car & Fdy.
	700	Box	100,000	40	6	Steel	44,200	July	December	National Steel Car
	300	Box	100,000	40	6	Steel	44,200	July	December	Eastern Car
	500	Box	100,000	40	6	Steel	44,200	September	1st qtr. '51	Eastern Car
	500	Box	100,000	40	6	Steel	44,200	September	1st qtr. '51	National Steel Car
	1,000	Box	100,000	40	6	Steel	44,200	September	1st qtr. '51	Can. Car & Fdy.
	200	Refrig.	100,000	40	0	Steel	62,400	February	August	National Steel Car
	20	Tank	16,000 Imp.g.	48	1	Steel	68,400	January	August	Can. Car & Fdy.
	50	Cov. Hopper	140,000	36	0	Steel	50,800	May	December	National Steel Car
	300	Box	124,000	40	6	Steel	44,700	October	July '51	National Steel Car
	350	Refrig.	104,000	40	0	Steel	65,000	October	1951	National Steel Car
	50	Cov. Hopper	158,000	..	..	Steel	52,000	October	Oct. '51	National Steel Car
	225	Longitudinal Hopper	140,000	40	8	Steel	50,500	November	Oct. '51	Eastern Car
	900	Box	100,000	40	6	Steel	44,000	October	December	Can. Car & Fdy.
	350	Automobile	100,000	40	6	Steel	.....	October	Oct. '51	Can. Car & Fdy.
	100	Flat	140,000	52	6	Steel	.....	October	Jan. '52	Can. Car & Fdy.
	1,000	Box	124,000	40	6	Steel	44,700	December	Nov.-Dec. '51	National Steel Car
International Nickel Co.	1	Transfer	.....	17	4	Steel	31,400	July	November	Can. Car & Fdy.
Pacific Great Eastern	20	Longitudinal Hopper	155,000	17	4	Steel	51,500	May	October	National Steel Car
St. Lawrence Starch Co.	4	Tank	8,000 U.S.g.	34	8	Steel	47,600	February	August	Can. Car & Fdy.
Sydney & Louisburg	100	Hopper	100,000	30	11	Steel	39,800	October	Jan. '51	Eastern Car
United States Army	41	Hopper	100,000	33	0	Steel	.....	October	June '51	Can. Car & Fdy.



Courtesy Great Northern

The Great Northern's "Red River," is typical of the modern motive power and equipment in passenger service today

Motive Power in 1950

Locomotive orders, mostly for diesel-electrics, reached the largest total since 1918 and in dollar value exceeded all previous records

By **FRED C. MILES**
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Not since 1918 have the railroads of this country ordered as many locomotives as were ordered in 1950, and the total of 4,234 locomotive units—all but 43 of them diesel-powered—has been equaled only six times since 1900. Of the 4,207 diesel-powered units, 3,734 were in the 1,000- to 2,000-hp. group, and 229 were of 2,000 to 2,500 hp. The rest varied from 150 to 800 hp. Outstanding, from the new development standpoint, was the order, announced in *Railway Age* for December 30, 1950, of the Union Pacific for 10 American Locomotive-General Electric 4,500-hp. gas turbine electric units.

Diesel Train-Miles Up

The diesel-electric locomotive, during the past year, took over a greater share of the traffic on American railroads in all classes of service so that in September (the latest month for which figures are available), the freight service performance figures indicated that 38.9 per cent of the train miles are now in diesel-electric powered trains, an increase of 7.9 per cent over the previous year. Steam still handled 59.8 per cent of the freight train mileage, but lost 8 per cent to the diesel. The locomotive mileages in freight service show similar changes and percentages, but it is in the gross ton-mileage figures that the inroads of the diesel are best seen. In August, 1950, the diesel handled 44.6 per cent of the gross ton-miles and steam 55.2 per cent.

In passenger service, where the diesel-electric locomotive came into the picture several years before its introduction in freight service, it has taken over more and more of the traffic, and as of August of last year, 53.7 per cent of the passenger train-miles and 51.8 per cent of the passenger locomotive-miles were diesel-electric, while 41.0 and 42.0 per cent, respectively, of such train-miles and locomotive-miles were made with steam power.

As of November 1950 there were still 25,575 steam locomotives in the inventory of American railroads, 1,103 of which were stored serviceable as of that date, and 12.3 per cent were held out of service for classified repairs. Retirements of steam power went on during 1950 at an average rate of about 400 units a month, and the installations of new diesel-electric units proceeded at an average rate of about 190 a month. There may, or may not, be any significance to the relation between the average number of steam locomotives retired and

the new diesel-electric units installed, but there is no doubt that there is ample background of experience to demonstrate that the diesel-electric can replace two or more old steam locomotives.

Many people still look upon the diesel-electric as a new type of motive power. Actually, it has been in service on our railroads in ever-increasing numbers for 25 years, and the fact that the statistics show a total of 233 diesel-electric units retired during 1950 indicates that growing numbers of the diesels that have been running for many years have now become obsolete and are being replaced with new units.

In switching service, the diesel-electric has stood out above any other form of motive power for some time, and the yard switching service hours figures for the first eight months of 1950 show that 59 per cent of the yard switching hours were produced by diesels and 40 per cent by steam. In the previous year, the corresponding figures were 47.3 per cent and 52.2 per cent respectively. These latter figures do not include passenger switching, or freight train switching, which are a small part of the total switching operations. There are now many indications that as the large number of diesel-electric units grow older in years and miles the cost of operation, particularly as related to maintenance, is increasing. The greater availability and capacity for service of the diesel-electric still are sufficiently greater, as compared to the average steam locomotive remaining in service, for the overall figures from the standpoint of economics to leave much in favor of the diesel.

The Union Pacific experimental 4,500-hp. gas turbine-electric unit, which has been in road service for a year, has performed satisfactorily enough for that road to be willing to invest in ten more of the same type.

Motive Power Ordered in 1950

Locomotives ordered in this country in 1950 totaled 4,669 units, including 233 for export, according to data obtained by *Railway Age*. The 4,436 units purchased for domestic service included 15 steam locomotives (ordered by the Norfolk & Western from its own shops), 18 electric locomotives, 10 gas turbine-electric locomotives and 4,393 diesel locomotive units (of which 4,381 were diesel-electric and 12 were diesel-hydraulic). Diesel-electric locomotive units ordered by United States railroads, numbered 4,205, of which 2,107, or over half, were 1,500-hp. units. Two railroads, the Baltimore & Ohio and the Portland Terminal, contracted during the year to lease a total of 195 diesel-electric locomotive units ordered for them by the Equitable Life Assurance Society.

The accompanying detailed list of locomotive orders was compiled from information submitted to *Railway Age* by railroads, private car lines, industrial concerns and contract locomotive builders. When orders for diesels were reported in terms of complete locomotives, rather than as units, they are so listed below, to indicate how the purchaser intends to use the equipment. Orders for complete locomotives, however, were divided into their unit components when compiling figures for the two smaller tables.

DIESEL LOCOMOTIVE UNITS ORDERED IN 1950 BY HORSEPOWER AND PURCHASER

Horse-power	Railroads	Private Car Lines and others	For Export	Totals
2,500	11	0	0	11
2,400	24	0	0	24
2,250	152	0	0	152
2,000	42	0	* 0	42
1,600	722	5	43	770
1,500	2,107	2	2	2,099
1,400	0	0	50	50
1,350	0	0	8	8
1,200	690	16	5	711
1,000	215	1	32	248
800	79	17	0	96
750	4	7	0	11
730	0	0	8	8
675	1	0	2	3
660	57	10	11	78
600	61	10	0	71
550	3	30	20	53
500	* 15	0	17	32
480	0	6	1	7
400	1	1	0	2
380	19	10	0	29
300	2	29	11	42
275	0	4	0	4
243	0	4†	3†	7
240	0	0	4*	4
190	2†	7**	4#	13
150	0	27	4	31
	4,207	186	225	4,618

† Diesel-Hydraulic.
* One is Diesel-Hydraulic.
** Six are Diesel-Hydraulic.
# Two are Diesel-Mechanical.

LOCOMOTIVES ORDERED, 1929-1950

Year	Steam	Diesel	Electric	Total	U. S. Export
1950....	15	4,393*	28#	4,436	233
1949....	13	1,782*	10	1,805	115
1948....	54	2,661*	2	2,717	435
1947....	79	2,149	1	2,229	635
1946....	55	989	8	1,052	629
1945....	148	691	6	845	1,985
1944....	74	680	3	757	134
1943....	413	635	0	1,048	60
1942....	363	894	12	1,269	32
1941....	302	1,104	38	1,444	85
1940....	207	492	13	712	85
1939....	119	249	32	400	40
1938....	36	160	29	225	24
1937....	173	145	36	354	56
1936....	435	77	24	536	22
1935....	30	60	7	97	15
1934....	72	37	76	185	17
1933....	17	25	0	42	7
1932....	5	7	0	12	1
1931....	62	21	91	174	28
1930....	382	18	21	421	20
1929....	1,055	80	95	1,230	106

Note: U. S. Government purchases excluded for years 1942-1944.
* 1950, 1949 and 1948 diesel orders are shown in units; diesel orders for previous years are shown in locomotives, which may include one or more units.
# Includes 10 gas turbine electrics.

STEAM LOCOMOTIVES ORDERED IN 1950

For Service in the United States

Purchaser	No.	Type	Service	Weight Lb.	Tractive Force	Cylinders	Date of Order	Date of Delivery	Builder
Norfolk & Western	15	0-8-0	Switching	249,000	62,932	25x28(2)	June	Feb.-Dec. '51	R. R. Shops

For Export

Purchaser	No.	Type	Service	Weight Lb.	Tractive Force	Cylinders	Date of Order	Date of Delivery	Builder
E. F. Dona Teresa Cristina (Brazil)	2	2-6-6-2	Freight	164,000	30,700	14x22(4)	January	July	Baldwin

Union Pacific three-unit 4,500 hp. Alco-G. E. freight power

ELECTRIC, DIESEL AND OTHER INTERNAL COMBUSTION LOCOMOTIVES

Purchaser	No.	Wheel Arrangement	Service	Type	Weight Lb.	Horsepower	Date of Order	Date of Delivery	Builder Locomotive Builder Electrical Equipment Engine Builder
Akron & Barberton Belt	1	B-B	Switching	Diesel-Elec.	240,000	1,200	November	Mar. '51	Baldwin-West.
Akron, Canton & Youngstown	1	B-B	Freight	Diesel-Elec.	250,000	2,000	June	Jan. '51	Fairbanks, Morse-West.
Allegheny & South Side	1	B-B	Switching	Diesel-Elec.	198,000	600	October	.....	Electro-Motive
Alton & Southern	1	B-B	Rd.-Sw.	Diesel-Elec.	125,000	1,600	August	November	American-G. E.
Ann Arbor	7	2(B-B)	Freight	Diesel-Elec.	.....	3,200	August	December	American-G. E.
	2	B-B	Rd.-Sw.	Diesel-Elec.	.....	1,000	August	November	American-G. E.
	4	B-B	Switching	Diesel-Elec.	.....	660	August	November	American-G. E.
Ashley, Drew & Northern	1	B-B	Switching	Diesel-Elec.	190,000	660	May	October	G. E.-Cooper-Bess.
Atchison, Topeka & Santa Fe	1	C-C	Transfer	Diesel-Elec.	354,000	2,000	January	February	Baldwin-West.
	4	B-B	Switching	Diesel-Elec.	246,000	1,200	March	Sept.-Oct.	Fairbanks, Morse.
	1	B-B	Switching	Diesel-Elec.	230,000	1,000	March	August	Electro-Motive
	5	B-B	Freight	Diesel-Elec.	240,000	1,500	April	Oct.-Dec.	Electro-Motive
	1	2(B-B)	Transfer	Diesel-Elec.	496,000	2,400	August	August	Electro-Motive
	10	B-B	Switching	Diesel-Elec.	.....	1,600	July	Feb.-Mar.'51	Fairbanks, Morse-West.
	10	....	Switching	Diesel-Elec.	.....	1,600	August	Feb.-Mar.'51	.....
	28	B-B	Freight	Diesel-Elec.	240,000	1,500	July	1950-51	Electro-Motive
	1	B-B	Transfer	Diesel-Elec.	496,000	2,400	October	Jan. '51	Electro-Motive
	17	4(B-B)	Freight	Diesel-Elec.	920,000	6,000	October	1951	Electro-Motive
	4	3(B-B)	Freight	Diesel-Elec.	690,000	4,500	October	July '51	Electro-Motive
	1	....	Switching	Diesel-Elec.	.....	1,600	October	October	.....
	10	....	Switching	Diesel-Elec.	246,000	1,200	October	July '51	Fairbanks, Morse
	10	....	Switching	Diesel-Elec.	.....	1,000	October	Mar.-Ap. '51	.....
	1	B	Switching	Diesel-Hyd.	50,000	190	April	September	Whitcomb-Hercules
Atlanta & West Point	1	B-B	Gen. Purpose	Diesel-Elec.	227,000	1,500	March	September	Electro-Motive
	2	B-B	Gen. Purpose	Diesel-Elec.	227,000	1,500	October	Feb. '51	Electro-Motive
	2	B-B	Road	Diesel-Elec.	258,000	1,500	August	Mar. '51	Electro-Motive
Atlantic Coast Line	8	B-B	Freight	Diesel-Elec.	231,200	1,500	June	October	Electro-Motive
	10	B-B	Rd.-Sw.	Diesel-Elec.	238,500	1,500	June	October	Electro-Motive
	20	B-B	Freight	Diesel-Elec.	231,200	1,500	October	.....	Electro-Motive
	85	B-B	Rd.-Sw.	Diesel-Elec.	238,500	1,500	October	.....	Electro-Motive
	20	B-B	Switching	Diesel-Elec.	246,500	1,200	October	.....	Electro-Motive
Atlantic & East Carolina	1	B-B	Rd.-Sw.	Diesel-Elec.	226,000	1,000	October	Feb. '51	American-G. E.
Atlantic & Western	1	B-B	Switching	Diesel-Elec.	140,000	660	September	October	G. E.-Cooper-Bess.
Baltimore & Annapolis	1	B-B	Switching	Diesel-Elec.	140,000	660	January	January	G. E.-Cooper-Bess.
Baltimore & Ohio	4	A1A-A1A	Passenger	Diesel-Elec.	329,000	2,250	May-Aug.	Sept.-Oct.	Electro-Motive
	4*	A1A-A1A	Passenger	Diesel-Elec.	329,000	2,250	May-Aug.	Sept.-Oct.	Electro-Motive
	18	B-B	Freight	Diesel-Elec.	247,000	1,500	May	August	Electro-Motive
	34	B-B	Freight	Diesel-Elec.	247,000	1,500	July	Sept.-Oct.	Electro-Motive
	86*	B-B	Freight	Diesel-Elec.	247,000	1,500	August	1950-51	Electro-Motive
	28*	B-B	Freight	Diesel-Elec.	247,000	1,600	September	4th qtr. '50	American-G. E.
	14*	B-B	Freight	Diesel-Elec.	253,000	1,600	July	Nov.-Dec.	Baldwin-West.
	24*	B-B	Switching	Diesel-Elec.	240,000	1,000	July	1950	Baldwin-West.
	24*	B-B	Switching	Diesel-Elec.	241,000	1,200	September	December	Lima-Hamilton
	10*	B-B	Switching	Diesel-Elec.	247,000	1,200	September	December	Fairbanks, Morse-West.
	2	B-B	Switching	Diesel-Elec.	88,000	380	July	October	G. E.-Cater.
	2	B-B	Switching	Diesel-Elec.	88,000	380	September	October	G. E.-Cater.
	2	B	Pusher	Electric	80,000	300	June	Jan. '51	General Electric
Bangor & Aroostook	12	B-B	Gen. Purpose	Diesel-Elec.	240,737	1,500	July	November	Electro-Motive
Bessemer & Lake Erie	5	C-C	Switching	Diesel-Elec.	329,800	1,500	May	June-July	Baldwin-West.
	14	B-B	Freight	Diesel-Elec.	248,000	1,500	May	June	Electro-Motive
	14	B-B	Freight	Diesel-Elec.	248,000	1,500	September	1st half '51	Electro-Motive
Birmingham Southern	1	B-B	Switching	Diesel-Elec.	249,500	1,600	June	October	American-G. E.
Boston & Maine	2	B-B	Freight	Diesel-Elec.	248,000	1,500	May	August	Electro-Motive
	2	B-B	Freight	Diesel-Elec.	248,000	1,500	May	December	Electro-Motive
	6	B-B	Rd.-Sw.	Diesel-Elec.	248,000	1,500	May	October	Electro-Motive
	2	B-B	Rd.-Sw.	Diesel-Elec.	254,000	1,500	May	December	Electro-Motive
	6	B-B	Switching	Diesel-Elec.	248,000	1,000	May	August	American-G. E.

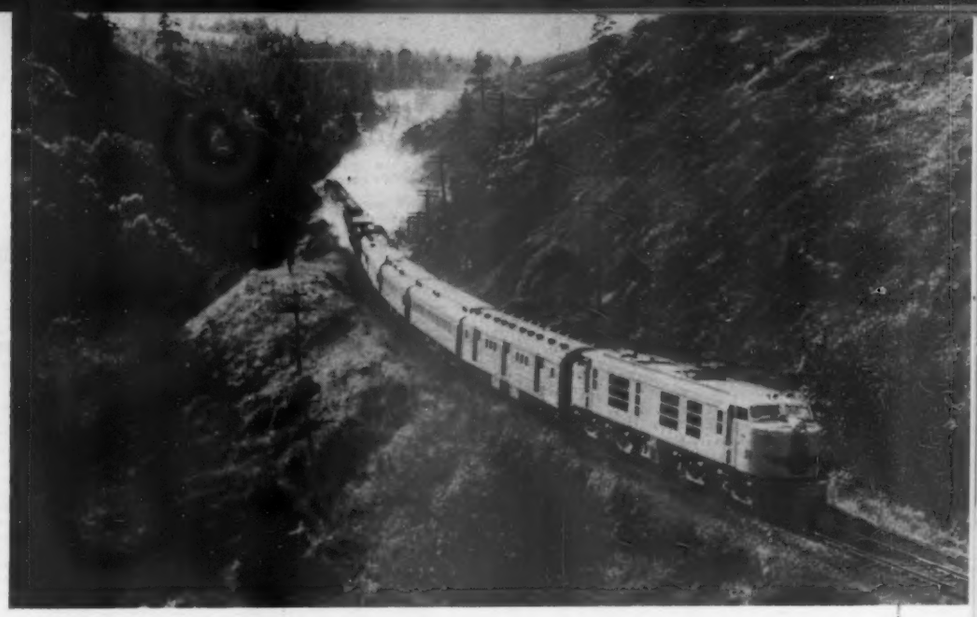
*Leased from the Equitable Life Assurance Society

Purchaser	No.	Wheel Arrangement	Service	Type	Weight Lb.	Horsepower	Date of Order	Date of Delivery	Builder Locomotive Builder Electrical Equipment Engine Builder
Boston & Maine (Cont.)	2	B-B	Switching	Diesel-Elec.	248,000	1,000	May	September	American-G. E.
	4	B-B	Switching	Diesel-Elec.	200,000	660	May	September	American-G. E.
Boyne City	1	B-B	Switching	Diesel-Elec.	88,000	380	August	September	G. E.-Cater.
Carolina Southern	1	B-B	Switching	Diesel-Elec.	140,000	660	September	Jan. '51	G. E.-Cooper-Bess.
Central of Georgia	2	B-B	Freight	Diesel-Elec.	247,000	1,500	April	August	Electro-Motive
	3	B-B	Freight	Diesel-Elec.	249,000	1,500	April	September	American-G. E.
	2	A1A-A1A	Passenger	Diesel-Elec.	322,000	2,250	April	September	Electro-Motive
	7	B-B	Freight	Diesel-Elec.	247,000	1,500	November	Apr. '51	Electro-Motive
	6	B-B	Freight	Diesel-Elec.	247,000	1,500	November	May '51	Electro-Motive
	9	B-B	Freight	Diesel-Elec.	249,000	1,500	November	Apr. '51	American-G. E.
Central of N. J.	4	B-B	Frt.-Pass.	Diesel-Elec.	259,830	1,600	January	July	Fairbanks, Morse-West.
	5	B-B	Frt.-Pass.	Diesel-Elec.	246,900	1,000	January	June	American-G. E.
	3	B-B	Frt.-Pass.	Diesel-Elec.	245,010	1,600	January	June	American-G. E.
Central of Pennsylvania	3	B-B	Switching	Diesel-Elec.	237,200	1,000	January	April	Baldwin-West.
	4	B-B	Switching	Diesel-Elec.	243,290	1,200	January	May	Electro-Motive
	5	B-B	Frt.-Pass.	Diesel-Elec.	242,020	1,600	January	June	American-G. E.
Charleston & Western Carolina	11	B-B	Gen. Purpose	Diesel-Elec.	240,000	1,500	July	October	Electro-Motive
	2	B-B	Switching	Diesel-Elec.	248,000	1,200	July	.....	Electro-Motive
	6	B-B	Freight	Diesel-Elec.	230,000	1,500	July	.....	Electro-Motive
Chesapeake & Ohio	2	B-B	Transfer	Diesel-Elec.	496,000	2,400	April	August	Electro-Motive
	16	3(B-B)	Freight	Diesel-Elec.	704,000	4,500	June	September	Electro-Motive
	5‡	B-B	Switching	Diesel-Elec.	250,000	1,200	June	December	G. M. Diesel, Ltd.
	16‡	B-B	Switching	Diesel-Elec.	260,000	1,500	June	January	G. M. Diesel, Ltd.
	18	C-C	Switching	Diesel-Elec.	360,000	1,600	July	November	Baldwin-West.
	8	C-C	Switching	Diesel-Elec.	360,000	1,600	October	May '51	Baldwin-West.
	3	C-C	Switching	Diesel-Elec.	325,000	1,500	April	April	Baldwin-West.
Chicago & Eastern Illinois	4	B-B	Switching	Diesel-Elec.	240,000	1,500	October	Jan. '51	Electro-Motive
Chicago & Illinois Western	1	B-B	Switching	Diesel-Elec.	248,000	1,200	January	April	Electro-Motive
	2	B-B	Switching	Diesel-Elec.	248,000	1,200	June	December	Electro-Motive
Chicago & North Western	4	A1A-A1A	Passenger	Diesel-Elec.	331,000	2,250	February	July	Electro-Motive
	30	B-B	Freight	Diesel-Elec.	232,600	1,500	February	April	Electro-Motive
	2	B-B	Rd.-Sw.	Diesel-Elec.	255,000	1,500	July	August	Electro-Motive
	1	B-B	Rd.-Sw.	Diesel-Elec.	252,200	1,500	July	September	Electro-Motive
	5	C-C	Rd.-Sw.	Diesel-Elec.	288,000	1,600	February	December	Fairbanks-Morse-West.
	2	B-B	Switching	Diesel-Elec.	247,000	1,200	February	May	Fairbanks, Morse
	3	C-C	Rd.-Sw.	Diesel-Elec.	281,000	1,600	February	Jan. '51	American-G. E.
	10	B-B	Switching	Diesel-Elec.	230,000	1,000	February	May	American-G. E.
Chicago, Burlington & Quincy	9	A1A-A1A	Passenger	Diesel-Elec.	332,345	2,250	May	1950	Electro-Motive
	4	2(A1A-A1A)	Passenger	Diesel-Elec.	664,690	4,500	May	1950	Electro-Motive
	4	B-B	Freight	Diesel-Elec.	234,610	1,500	May	1950	Electro-Motive
	3	3(B-B)	Freight	Diesel-Elec.	694,715	3,000	May	1950	Electro-Motive
	20	B-B	Switching	Diesel-Elec.	247,325	1,200	May	1950	Electro-Motive
Chicago Great Western	4	B-B	Freight	Diesel-Elec.	230,000	1,500	August	.....	Electro-Motive
	2	B-B	Passenger	Diesel-Elec.	230,000	1,500	August	.....	Electro-Motive
	2	B-B	Passenger	Diesel-Elec.	230,000	1,500	September	.....	Electro-Motive
	2	B-B	Passenger	Diesel-Elec.	258,000	1,500	September	.....	Electro-Motive
Chicago Heights Terminal Transfer	1	B-B	Switching	Diesel-Elec.	240,000	1,500	July	December	Electro-Motive
Chicago, Milwaukee, St. Paul & Pacific	1	B-B	Switching	Diesel-Elec.	240,000	1,500	October	Jan. '51	Electro-Motive
	5	B-B	Switching	Diesel-Elec.	.....	1,200	August	.....	American-G. E.
	5	B-B	Switching	Diesel-Elec.	240,000	1,200	August	November	Baldwin-West.
	4	C-C	Switching	Diesel-Elec.	325,000	1,600	October	1951	Baldwin-West.
	1	B-B	Switching	Diesel-Elec.	240,000	1,200	November	1951	Baldwin-West.
	12	3(B-B)	Freight	Diesel-Elec.	690,000	4,500	March	.....	Electro-Motive
	1	B-B	Switching	Diesel-Elec.	248,000	1,200	March	.....	Electro-Motive
	1	B-B	Transfer	Diesel-Elec.	496,000	2,400	March	.....	Electro-Motive
	9	B-B	Freight	Diesel-Elec.	230,000	1,500	August	.....	Electro-Motive
	2	B-B	Passenger	Diesel-Elec.	230,000	1,500	September	.....	Electro-Motive
	4	B-B	Passenger	Diesel-Elec.	258,000	1,500	September	.....	Electro-Motive
	12	B-B	Freight	Diesel-Elec.	230,000	1,500	September	.....	Electro-Motive
	5	B-B	Transfer	Diesel-Elec.	496,000	2,400	November	....	Electro-Motive
	2	B-B	Switching	Diesel-Elec.	246,000	1,200	February	May	Fairbanks, Morse
	5	B-B	Switching	Diesel-Elec.	246,000	1,200	August	Feb. '51	Fairbanks, Morse
	18	B-B	Freight	Diesel-Elec.	244,000	1,600	September	May '51	Fairbanks, Morse-West.
	5	B-B	Switching	Diesel-Elec.	246,000	1,200	October	Mid. '51	Fairbanks, Morse.
	12†	2-D+2-D	Road	Electric	500,000	.....	August	Aug.-Sept.	General Electric
	10	B-B	Switching	Diesel-Elec.	246,000	1,200	December	.....	Fairbanks, Morse
Chicago River & Indiana	6	B-B	Switching	Diesel-Elec.	247,000	1,200	February	June	Electro-Motive
	2	B-B	Switching	Diesel-Elec.	232,000	800	February	October	Electro-Motive
	7	B-B	Switching	Diesel-Elec.	199,000	600	February	October	Electro-Motive
	21	B-B	Switching	Diesel-Elec.	230,000	800	July	May '51	Lima-Hamilton-West.
	6	B-B	Switching	Diesel-Elec.	248,000	1,200	July	Apr. '51	Lima-Hamilton-West.
Chicago, Rock Island & Pacific	1	A1A-A1A	Passenger	Diesel-Elec.	314,000	2,250	March	April	Electro-Motive
	12	B-B	Rd.-Sw.	Diesel-Elec.	246,000	1,500	March	July-Aug.	Electro-Motive
	3	B-B	Switching	Diesel-Elec.	233,000	800	April	September	Electro-Motive
	15	B-B	Rd.-Sw.	Diesel-Elec.	247,000	1,600	April	September	American-G. E.
	15	B-B	Switching	Diesel-Elec.	150,000	500	April	4th qtr.	Whit.-West.-Cater.
	2	B-B	Switching	Diesel-Elec.	227,000	800	March	September	Lima-Hamilton
	2	B-B	Switching	Diesel-Elec.	220,000	1,000	April	December	Davenport-Besler
	6	A1A-A1A	Passenger	Diesel-Elec.	314,000	2,250	November	Mid. '51	Electro-Motive
	4	3(B-B)	Freight	Diesel-Elec.	690,000	4,500	September	Apr. '51	Electro-Motive
	13	B-B	Rd.-Sw.	Diesel-Elec.	240,000	1,500	September	July-Aug.'51	Electro-Motive
Chicago, St. Paul, Minneapolis & Omaha	6	B-B	Freight	Diesel-Elec.	232,600	1,500	February	April	Electro-Motive
	1	C-C	Rd.-Sw.	Diesel-Elec.	288,000	1,600	February	December	Fairbanks, Morse-West.
Chicago, West Pullman & Southern	1	B-B	Switching	Diesel-Elec.	230,000	800	November	.....	Electro-Motive
Cincinnati Union Terminal	2	B-B	Switching	Diesel-Elec.	130,000	750	September	May '51	Lima-Hamilton
	2	B-B	Switching	Diesel-Elec.	130,000	750	January	April	Lima-Hamilton
Clinchfield	6	B-B	Switching	Diesel-Elec.	248,000	1,200	March	July	Electro-Motive
	12	B-B	Rd.-Sw.	Diesel-Elec.	248,000	1,500	July	December	Electro-Motive
Colorado & Southern	3	4(B-B)	Freight	Diesel-Elec.	916,020	6,000	January	August	Electro-Motive
	1	B-B	Switching	Diesel-Elec.	247,327	1,200	April	September	Electro-Motive
Columbia, Newberry & Laurens	3	B-B	Rd.-Sw.	Diesel-Elec.	240,000	1,500	May	.....	Electro-Motive
Conemaugh & Black Lick	7	B-B	Switching	Diesel-Elec.	248,000	1,200	Mar.-June	.....	Electro-Motive
	4	B-B	Switching	Diesel-Elec.	198,000	600	June	.....	Electro-Motive
Cornwall	2	B-B	Switching	Diesel-Elec.	248,000	1,200	January	.....	Electro-Motive
	1	B-B	Switching	Diesel-Elec.	248,000	1,200	August	.....	Electro-Motive
Coudersport & Port Allegany	1	B-B	Switching	Diesel-Elec.	88,000	380	August	December	G. E.-Cater.
Danville & Western	2	B-B	Switching	Diesel-Elec.	229,000	1,600	April	October	American-G. E.
Delaware & Hudson	7	B-B	Rd.-Sw.	Diesel-Elec.	247,600	1,500	January	June	American-G. E.
	18	B-B	Switching	Diesel-Elec.	230,000	1,000	June	Oct.-Nov.	American-G. E.
	3	B-B	Rd.-Sw.	Diesel-Elec.	247,600	1,500	June	Oct.-Nov.	American-G. E.
	1	B-B	Rd.-Sw.	Diesel-Elec.	246,900	1,500	June	Oct.-Nov.	American-G. E.
	12	B-B	Rd.-Sw.	Diesel-Elec.	245,400	1,500	June	Oct.-Nov.	American-G. E.
Denver & Rio Grande Western	5	4(B-B)	Freight	Diesel-Elec.	929,000	6,000	February	Apr.-June	Electro-Motive
	4	B-B	Rd.-Sw.	Diesel-Elec.	234,000	1,500	February	October	Electro-Motive
DeQueen & Eastern	1	B-B	Switching	Diesel-Elec.	230,000	800	October	.....	Electro-Motive
Detroit & Toledo Shore Line	3	B-B	Switching	Diesel-Elec.	248,000	1,200	February	April	Electro-Motive
	2	B-B	Rd.-Sw.	Diesel-Elec.	248,000	1,500	September	Jan. '51	Electro-Motive
	1	B-B	Switching	Diesel-Elec.	248,000	1,200	November	Apr. '51	Electro-Motive
Detroit Terminal	1	B-B	Switching	Diesel-Elec.	241,000	1,200	October	Jan. '51	Electro-Motive
Detroit, Toledo & Ironton	5	B-B	Switching	Diesel-Elec.	238,370	1,200	March	October	Electro-Motive
Donora Southern	9	B-B	Switching	Diesel-Elec.	230,000	800	October	.....	Electro-Motive
Duluth, South Shore & Atlantic	1	C-C	Rd.-Sw.	Diesel-Elec.	329,800	1,500	July	August	Baldwin-West.
	1	C-C	Rd.-Transfer	Diesel-Elec.	354,700	2,000	July	August	Baldwin-West.

‡For the Canadian division of the Pere Marquette district.

†Originally built for the U. S. S. R.

Purchaser	No.	Wheel Arrange-ment	Service	Type	Weight Lb.	Horse-power	Date of Order	Date of Delivery	Builder Locomotive Builder Electrical Equipment Engine Builder
Duluth, South Shore (Cont.)	5	C-C	Rd.-Sw.	Diesel-Elec.	329,800	1,500	July	Jan. '51	Baldwin-West.
	1	B-B	Rd.-Sw.	Diesel-Elec.	241,800	1,000	October	Jan. '51	American-G. E.
Elgin, Joliet & Eastern	1	C-C	Freight	Diesel-Elec.	360,000	2,000	November	November	Baldwin-West.
East Erie Commercial	2	B-B	Switching	Diesel-Elec.	140,000	660	September	September	G. E.-Cooper-Bess.
	1	B-B	Switching	Diesel-Elec.	140,000	660	October	October	G. E.-Coooper-Bess.
Erie	1	B-B	Switching	Diesel-Elec.	247,320	1,200	February	May	Electro-Motive
	5	B-B	Switching	Diesel-Elec.	247,808	1,200	March	November	Electro-Motive
	1	B-B	Switching	Diesel-Elec.	248,000	1,200	August	Apr. '51	Electro-Motive
	1	B-B	Switching	Diesel-Elec.	230,000	1,000	August	Feb. '51	American-G. E.
	2	C-C	Switching	Diesel-Elec.	235,000	1,200	August	Jan. '51	Baldwin-West.
	3	B-B	Switching	Diesel-Elec.	249,378	1,200	March	July	Lima-Hamilton
	3	B-B	Switching	Diesel-Elec.	249,378	1,200	March	August	Lima-Hamilton
	14	A1A-A1A	Passenger	Diesel-Elec.	316,500	2,250	August	Jan.-Mar.'51	Electro-Motive
	2	A1A-A1A	Passenger	Diesel-Elec.	303,000	2,250	August	Feb. '51	American-G. E.
	2	B-B	Pass.-Sw.	Diesel-Elec.	248,380	1,600	March	October	American-G. E.
	8	B-B	Pass.-Sw.	Diesel-Elec.	240,000	1,600	August	Jan.-Feb.'51	American-G. E.
	1	C-C	Pass.-Sw.	Diesel-Elec.	250,600	1,600	August	Feb. '51	Baldwin-West.
	22	B-B	Frt.-Sw.	Diesel-Elec.	241,078	1,500	March	Oct.-Nov. Dec.	Electro-Motive
	4	B-B	Pass.-Sw.	Diesel-Elec.	240,000	1,500	March	December	Electro-Motive
	2	(4)B-B	Freight	Diesel-Elec.	968,700	6,400	March	October	American-G. E.
	2	(4)B-B	Freight	Diesel-Elec.	960,000	6,400	August	Jan. '51	American G. E.
	1	(3)B-B	Freight	Diesel-Elec.	690,000	4,500	August	Apr. '51	Electro-Motive
	2	B-B	Frt.-Sw	Diesel-E.ec.	237,120	1,500	February	April	American-G. E.
	12	B-B	Frt.-Sw.	Diesel-Elec.	239,520	1,600	March	Sept.-Oct.	American-G. E.
	8	B-B	Frt.-Sw.	Diesel-Elec.	240,000	1,600	August	Jan. '51	American-G. E.
	5	C-C	Frt.-Sw.	Diesel-Elec.	236,000	1,600	August	Jan.-Feb.'51	Baldwin-West.
	2	C-C	Frt.-Sw.	Diesel-Elec.	331,700	1,500	February	July	Baldwin-West.
	9	C-C	Frt.-Sw.	Diesel-Elec.	327,900	1,500	March	Sept.-Oct.	Baldwin-West.
	2	B-B	Frt.-Sw.	Diesel-Elec.	246,871	1,500	February	September	Electro-Motive
	4	B-B	Frt.-Sw.	Diesel-Elec.	240,000	1,500	August	Apr. '51	Electro-Motive
Fort Worth & Denver City	3	4(B-B)	Freight	Diesel-Elec.	916,020	6,000	May	August	Electro-Motive
Georgia	1	B-B	Gen. Purpose	Diesel-Elec.	227,000	1,500	March	September	Electro-Motive
	4	B-B	Gen. Purpose	Diesel-Elec.	227,000	1,500	July	October	Electro-Motive
	2	B-B	Gen. Purpose	Diesel-Elec.	227,000	1,500	January	Feb. '51	Electro-Motive
Georgia & Florida	3	B-B	Switching	Diesel-Elec.	198,000	600	July	August	Electro-Motive
	6	B-B	Gen. Purpose	Diesel-Elec.	240,000	1,500	July	September	Electro-Motive
Grasse River	1	B-B	Switching	Diesel-Elec.	90,000	300	August	December	G. E.-Cummins
Great Northern	2	2(B-B)	Freight	Diesel-Elec.	460,000	3,000	January	.....	Electro-Motive
	3	3(B-B)	Freight	Diesel-Elec.	690,000	4,500	January	.....	Electro-Motive
	3	B-B	Switching	Diesel-Elec.	248,000	1,200	January	.....	Electro-Motive
	2	B-B	Passenger	Diesel-Elec.	230,000	1,500	February	.....	Electro-Motive
	23	B-B	Rd.-Sw.	Diesel-Elec.	240,000	1,500	February	.....	Electro-Motive
	2	3(B-B)	Passenger	Diesel-Elec.	690,000	4,500	March	.....	Electro-Motive
	7	B-B	Switching	Diesel-Elec.	248,000	1,200	November	.....	Electro-Motive
	2	B-B	Switching	Diesel-Elec.	230,000	800	November	.....	Electro-Motive
	30	B-B	Rd.-Sw.	Diesel-Elec.	240,000	1,500	November	.....	Electro-Motive
Gulf, Mobile & Ohio	4	B-B	Freight	Diesel-Elec.	230,000	1,500	April	July	Electro-Motive
	4	B-B	Rd.-Sw.	Diesel-Elec.	240,000	1,600	April	July	American-G. E.
	4	B-B	Freight	Diesel-Elec.	240,000	1,600	April	August	American-G. E.
Hampton & Branchville	1	B-B	Switching	Diesel-Elec.	140,000	660	November	Jan. '51	G-E.-Cooper-Bess.
	2	B-B	Switching	Diesel-Elec.	88,000	380	November	May '51	G. E.-Cater.
Helena & Northwestern	1	B-B	Switching	Diesel-Elec.	140,000	660	April	June	G. E.-Cooper-Bess.
Illinois Central	4	A1A-A1A	Passenger	Diesel-Elec.	297,000	2,250	May	June	Electro-Motive
	30	B-B	Switching	Diesel-Elec.	239,000	1,200	May	Aug.-Dec.	Electro-Motive
	2	B-B	Rd.-Sw.	Diesel-Elec.	240,000	1,500	April	November	Electro-Motive
	35	B-B	Switching	Diesel-Elec.	239,000	1,200	November	Aug.-Sept.-Oct. '51	Electro-Motive
	4	A1A-A1A	Passenger	Diesel-Elec.	297,000	2,250	November	Apr. '51	Electro-Motive
	3	B-B	Rd.-Sw.	Diesel-Elec.	240,000	1,500	November	Mar. '51	Electro-Motive
	2	B-B	Switching	Diesel-Elec.	198,000	600	November	Aug. '51	Electro-Motive
Illinois Northern	3	.....	Switching	Diesel-Elec.	.....	1,000	August	Oct.-Nov.	.....
International Great Northern	2	B-B	Freight	Diesel-Elec.	223,560	1,500	January	April	Electro-Motive
	3	B-B	Rd.-Sw.	Diesel-Elec.	239,020	1,500	January	August	Electro-Motive
	1	2(A1A-A1A)	Passenger	Diesel-Elec.	631,140	4,500	January	June	American-G. E.
	6	B-B	Rd.-Sw.	Diesel-Elec.	240,000	1,500	October	Mar.-Jne '51	Electro-Motive
	2	B-B	Rd.-Sw.	Diesel-Elec.	236,000	1,600	October	June '51	Baldwin-West.
Kansas City Southern	6	B-B	Freight	Diesel-Elec.	230,000	1,500	June	September	Electro-Motive
	10	B-B	Freight	Diesel-Elec.	231,000	1,500	June	September	Electro-Motive
	10	B-B	Switching	Diesel-Elec.	244,000	1,200	July	November	Electro-Motive
	3	B-B	Freight	Diesel-Elec.	230,000	1,500	September	Feb. '51	Electro-Motive
	3	B-B	Freight	Diesel-Elec.	231,000	1,500	September	Feb. '51	Electro-Motive
	6	B-B	Switching	Diesel-Elec.	244,000	1,200	September	Feb. '51	Electro-Motive
Kelly's Creek	1	B-B	Switching	Diesel-Elec.	140,000	660	February	April	G. E.-Cooper-Bess.
Kentucky & Indiana Terminal	5	B-B	Switching	Diesel-Elec.	270,000	1,200	August	Feb. '51	Fairbanks, Morse
Lake Superior & Ishpeming	2	B-B	Rd.-Sw.	Diesel-Elec.	246,000	1,600	June	September	American-G. E.
Lakeside & Marblehead	1	B-B	Switching	Diesel-Elec.	248,000	1,200	February	.....	Electro-Motive
Lake Terminal	5	B-B	Switching	Diesel-Elec.	230,000	800	October	.....	Electro-Motive
Lancaster & Chester	3	B-B	Rd.-Sw.	Diesel-Elec.	139,000	600	August	October	G. E.-Cooper-Bess.
Laurinburg & Southern	1	B-B	Switching	Diesel-Elec.	140,000	660	September	Jan. '51	G. E.-Cooper-Bess.
Lehigh & Hudson River	3	B-B	Rd.-Sw.	Diesel-Elec.	240,000	1,600	March	July	American-G. E.
	6	B-B	Rd.-Sw.	Diesel-Elec.	240,000	1,600	March	September	American-G. E.
	2	B-B	Rd.-Sw.	Diesel-Elec.	240,000	1,600	March	November	American-G. E.
Lehigh Valley	14	B-B	Switching	Diesel-Elec.	238,000	1,200	June	Sept.-Oct.	Baldwin-West.
	2	B-B	Rd.-Sw.	Diesel-Elec.	248,000	1,600	June	Oct.-Nov.	American-G. E.
	2	B-B	Rd.-Sw.	Diesel-Elec.	249,300	1,500	June	October	American-G. E.
	4	2(B-B)	Freight	Diesel-Elec.	480,000	3,200	June	November	American-G. E.
	3	2(B-B)	Freight	Diesel-Elec.	492,000	3,000	June	Jan. '51	Electro-Motive
	2	B-B	Switching	Diesel-Elec.	198,000	600	June	December	Electro-Motive
	4	B-B	Switching	Diesel-Elec.	248,000	1,200	June	December	Electro-Motive
	6	B-B	Switching	Diesel-Elec.	230,000	1,600	July	December	Electro-Motive
	1	B-B	Switching	Diesel-Elec.	197,000	660	May	June	American-G. E.
	18	B-B	Switching	Diesel-Elec.	246,000	880	September	2nd & 3rd qtr. '51	Electro-Motive
	13	B-B	Switching	Diesel-Elec.	248,000	1,200	September	2nd & 3rd qtrs. '51	Electro-Motive
	1	4(B-B)	Freight	Diesel-Elec.	960,000	6,000	September	1st or 2nd qtr. '51	American-G. E.
Long Island	1	B-B	Switching	Diesel-Elec.	240,000	1,500	June	June	Fairbanks, Morse-West.
	8	B-B	Passenger	Diesel-Elec.	272,000	1,600	October	July '51	Fairbanks, Morse-West.
	4	B-B	Passenger	Diesel-Elec.	286,000	2,400	October	June '51	Fairbanks, Morse-West.
	1	B-B	Switching	Diesel-Elec.	88,000	400	September	December	G. E.-Cater.
Louisiana & North West	2	B-B	Switching	Diesel-Elec.	230,000	800	August	.....	Electro-Motive
Louisiana Midland	1	B-B	Switching	Diesel-Elec.	248,000	1,200	October	.....	Electro-Motive
Louisville & Nashville	9	B-B	Switching	Diesel-Elec.	199,000	660	January	Apr.-July	American-G. E.
	6	B-B	Switching	Diesel-Elec.	248,000	1,200	January	March	Electro-Motive
	37	B-B	Freight	Diesel-Elec.	230,000	1,500	January	1950	Electro-Motive
	25	B-B	Freight	Diesel-Elec.	230,000	1,500	August	Oct.-Nov.	Electro-Motive
	16	B-B	Switching	Diesel-Elec.	248,000	1,200	August	December	Electro-Motive
	22	B-B	Frt.-Pass.	Diesel-Elec.	258,000	1,500	September	Jan.-Mar.'51	Electro-Motive
	4	A1A-A1A	Passenger	Diesel-Elec.	316,000	2,250	September	May '51	Electro-Motive
	10	B-B	Freight	Diesel-Elec.	230,000	1,500	November	Apr. '51	Electro-Motive
	25	B-B	Switching	Diesel-Elec.	248,000	1,200	November	Apr.-July.'51	Electro-Motive



Alco-G. E. 4,500 hp. gas turbine locomotive during test operation on the Union Pacific

General Electric photo

Purchaser	No.	Wheel Arrangement	Service	Type	Weight Lb.	Horsepower	Date of Order	Date of Delivery	Builder Locomotive Builder Electrical Equipment Engine Builder
Louisville & Nashville (Cont.)	13	B-B	Frt.-Pass.	Diesel-Elec.	258,000	1,500	November	May-June '51	Electro-Motive
	14	B-B	Frt.-Sw.	Diesel-Elec.	240,000	1,500	November	Apr. '51	Electro-Motive
Maine Central	2	B-B	Switching	Diesel-Elec.	248,000	1,000	April	August	American-G. E.
	3	B-B	Rd.-Sw.	Diesel-Elec.	248,000	1,500	April	October	Electro-Motive
	5	B-B	Rd.-Sw.	Diesel-Elec.	248,000	1,500	April	October	Electro-Motive
	3	B-B	Switching	Diesel-Elec.	248,000	1,200	April	September	Electro-Motive
McCloud River	1	C-C	Switching	Diesel-Elec.	295,000	1,500	April	July	Baldwin-West.
Minneapolis & St. Louis	1	2(B-B)	Freight	Diesel-Elec.	460,000	3,000	July	Jan. '51	Electro-Motive
	4	B-B	Switching	Diesel-Elec.	243,000	1,000	.....	.....	American-G. E.
Minneapolis, St. Paul & Sault Ste. Marie	4	2(B-B)	Passenger	Diesel-Elec.	486,400	3,000	April	June	Electro-Motive
	3	1B-1B	Rd.-Sw.	Diesel-Elec.	250,700	1,500	April	November	American-G. E.
	2	B-B	Rd.-Sw.	Diesel-Elec.	234,700	1,500	April	September	Electro-Motive
	2	2(B-B)	Freight	Diesel-Elec.	445,700	3,000	April	July	Electro-Motive
	1	B-B	Rd.-Sw.	Diesel-Elec.	241,800	1,000	April	August	American-G. E.
	3	2(B-B)	Freight	Diesel-Elec.	445,700	3,000	October	Apr. '51	Electro-Motive
	2	2(B-B)	Passenger	Diesel-Elec.	486,400	3,000	October	Mar. '51	Electro-Motive
	2	B-B	Rd.-Sw.	Diesel-Elec.	234,700	1,500	October	Apr. '51	Electro-Motive
	2	B-B	Rd.-Sw.	Diesel-Elec.	253,000	1,500	October	Apr. '51	Baldwin-West.
	1	1B-1B	Rd.-Sw.	Diesel-Elec.	250,700	1,500	October	Apr. '51	American-G. E.
	5	B-B	Rd.-Sw.	Diesel-Elec.	241,800	1,000	October	April	American-G. E.
Minnesota, Dakota & Western	1	B-B	Switching	Diesel-Elec.	160,000	550	April	July	G. E.-Cummings
Minnesota Western	1	B-B	Switching	Diesel-Elec.	246,000	1,200	June	Feb. '51	Fairbanks, Morse-West.
Missouri-Illinois	1	B-B	Rd.-Sw.	Diesel-Elec.	240,000	1,600	September	Jan. '51	American-G. E.
Missouri-Kansas-Texas	2	B-B	Rd.-Sw.	Diesel-Elec.	250,000	1,600	May	September	American-G. E.
	2	A1A-A1A	Passenger	Diesel-Elec.	286,000	2,250	May	June	American-G. E.
	2	A1A-A1A	Passenger	Diesel-Elec.	286,000	2,250	May	November	American-G. E.
	8	B-B	Rd.-Sw.	Diesel-Elec.	250,500	1,600	May	Sept.-Oct.	Baldwin-West.
	6	B-B	Rd.-Sw.	Diesel-Elec.	.....	1,600	August	December	American-G. E.
	6	A1A-A1A	Passenger	Diesel-Elec.	.....	2,250	August	Jan. '51	American-G. E.
	10	B-B	Rd.-Sw.	Diesel-Elec.	.....	1,500	August	Jan. '51	Electro-Motive
	5	A1A-A1A	Passenger	Diesel-Elec.	.....	2,250	November	2d qtr. '51	Electro-Motive
	2	B-B	Rd.-Sw.	Diesel-Elec.	.....	1,600	November	Apr. '51	American-G. E.
	4	B-B	Rd.-Sw.	Diesel-Elec.	.....	1,600	November	Mid.-'51	Fairbanks, Morse-West.
Missouri Pacific	5	3(B-B)	Freight	Diesel-Elec.	920,100	4,800	January	May-June	American-G. E.
	26	B-B	Rd.-Sw.	Diesel-Elec.	253,873	1,500	January	July	Electro-Motive
	4	A1A	Passenger	Diesel-Elec.	319,070	2,250	January	June	Electro-Motive
	1	2(A1A-A1A)	Passenger	Diesel-Elec.	631,140	4,500	January	June	American-G. E.
	9	B-B	Switching	Diesel-Elec.	238,100	1,000	January	April	Baldwin-West.
	5	B-B	Switching	Diesel-Elec.	247,680	1,200	January	June	Electro-Motive
	5	.....	Freight	Diesel-Elec.	720,000	4,800	October	Jan.-Feb. '51	American-G. E.
	2	.....	Freight	Diesel-Elec.	480,000	3,200	October	Jan.-Feb. '51	American-G. E.
	2	3(B-B)	Freight	Diesel-Elec.	690,000	4,500	October	Apr. '51	Electro-Motive
	2	2(B-B)	Freight	Diesel-Elec.	460,000	3,000	October	Apr. '51	Electro-Motive
	22	2(B-B)	Rd.-Sw.	Diesel-Elec.	240,000	3,000	October	Mar.-June '51	Electro-Motive
	5	2(B-B)	Rd.-Sw.	Diesel-Elec.	480,000	3,000	October	Mar.-June '51	Electro-Motive
	17	2(B-B)	Switching	Diesel-Elec.	248,000	1,200	October	Apr.-June '51	Electro-Motive
	20	2(B-B)	Switching	Diesel-Elec.	240,000	1,200	October	Apr.-June '51	Baldwin-West.
	3	2(A1A+A1A)	Passenger	Diesel-Elec.	606,000	4,500	October	Feb.-Mar. '51	American-G. E.
Montour	3	B-B	Switching	Diesel-Elec.	241,000	1,200	June	November	Electro-Motive
Moshassuck Valley	1	B-B	Switching	Diesel-Elec.	90,000	300	August	December	G. E.-Cummins
Nashville, Chattanooga & St. Louis	10	B-B	Switching	Diesel-Elec.	236,700	1,200	March	August	Electro-Motive
	10	B-B	Frt.-Pass.	Diesel-Elec.	219,000	1,500	March	June	Electro-Motive
	6	B-B	Frt.-Pass.	Diesel-Elec.	221,000	1,500	March	June	Electro-Motive
	4	B-B	Passenger	Diesel-Elec.	230,530	1,500	March	September	Electro-Motive
	13	B-B	Rd.-Sw.	Diesel-Elec.	228,180	1,500	March	September	Electro-Motive
	4	B-B	Switching	Diesel-Elec.	85,000	380	March	July	G. E.-Cater.
New York Central	4	A1A-A1A	Passenger	Diesel-Elec.	318,000	2,250	February	June	American-G. E.
	8	B-B	Rd.-Sw.	Diesel-Elec.	248,000	1,600	February	August	American-G. E.
	19	B-B	Switching	Diesel-Elec.	229,000	1,000	February	June	American-G. E.
	30	B-B	Switching	Diesel-Elec.	197,000	600	February	September	American-G. E.
	12	B-B	Rd.-Sw.	Diesel-Elec.	248,000	1,500	February	August	Electro-Motive
	18	B-B	Switching	Diesel-Elec.	246,000	1,200	February	June	Electro-Motive
	5	B-B	Switching	Diesel-Elec.	197,000	600	February	October	Electro-Motive
	16	B-B	Rd.-Sw.	Diesel-Elec.	248,000	1,200	February	October	Lima-Hamilton-West.
	10	B-B	Switching	Diesel-Elec.	248,000	1,200	February	December	Fairbanks, Morse-West.
	4	A1A-A1A	Passenger	Diesel-Elec.	329,000	2,250	October	July '51	Electro-Motive
	34	B-B	Freight	Diesel-Elec.	246,000	1,500	October	Apr. '51	Electro-Motive
	50	B-B	Rd.-Sw.	Diesel-Elec.	246,000	1,500	October	Nov. '51	Electro-Motive
	20	B-B	Switching	Diesel-Elec.	246,000	1,200	October	Feb. '51	Electro-Motive
	12	B-B	Freight	Diesel-Elec.	246,000	1,600	October	Mar. '51	American-G. E.
	50	B-B	Rd.-Sw.	Diesel-Elec.	246,000	1,600	October	July '51	American-G. E.
	13	B-B	Rd.-Sw.	Diesel-Elec.	248,000	1,600	October	June '51	Fairbanks, Morse-West.
	17	B-B	Rd.-Sw.	Diesel-Elec.	248,000	1,200	October	June '51	Baldw.-Lima-Ham.-West.

Purchaser	No.	Wheel Arrangement	Service	Type	Weight Lb.	Horsepower	Date of Order	Date of Delivery	Builder Locomotive Builder Electrical Equipment Engine Builder
Nelson & Albemarle	1	B-B	Switching	Diesel-Elec.	00,000	380	November	December	G. E.-Cater.
New York, Chicago & St. Louis	4	B-B	Switching	Diesel-Elec.	.....	1,200	April	May	Lima-Hamilton
	2	B-B	Switching	Diesel-Elec.	.....	1,000	April	June	American-G. E.
	1	B-B	Switching	Diesel-Elec.	.....	660	April	June	American-G. E.
	3	B-B	Switching	Diesel-Elec.	.....	1,200	April	October	Electro-Motive
	13	B-B	Gen. Purpose	Diesel-Elec.	.....	1,500	September	Feb. '51	Electro-Motive
	5	B-B	Switching	Diesel-Elec.	.....	1,200	September	Mar. '51	Electro-Motive
	2	B-B	Switching	Diesel-Elec.	.....	600	September	Jan. '51	Electro-Motive
	15	B-B	Switching	Diesel-Elec.	.....	1,000	September	Mar. '51	American-G. E.
New York, New Haven & Hartford	20	B-B	Rd.-Sw.	Diesel-Elec.	248,000	1,600	April	Aug.-Sept.	American-G. E.
	10	B-B	Rd.-Sw.	Diesel-Elec.	251,200	1,600	April	November	Fairbanks, Morse-West.
	10	B-B	Switching	Diesel-Elec.	248,000	1,200	April	4th qtr.	Lima-Hamilton-West.
New York Dock	2	B-B	Switching	Diesel-Elec.	130,000	550	August	Mar. '51	G. E.-Cummins
	3	B-B	Switching	Diesel-Elec.	88,000	380	August	Jan. '51	G. E.-Cummins
Norfolk Southern	5	C-C	All Service	Diesel-Elec.	290,000	1,600	September	Mar. '51	Baldwin-West.
North Louisiana & Gulf	1	B-B	Switching	Diesel-Elec.	140,000	660	August	September	G. E.-Cooper-Bess.
Northern Pacific	6	4(B-B)	Freight	Diesel-Elec.	992,000	6,000	November	Aug. '51	Electro-Motive
	3	B-B	Rd.-Sw.	Diesel-Elec.	240,000	1,500	November	Mar. '51	Electro-Motive
Okmulgee Northern	1	B-B	Switching	Diesel-Elec.	140,000	660	August	August	G. E.-Cooper-Bess.
Omaha, Lincoln & Beatrice	1	B-B	Switching	Diesel-Elec.	88,000	380	August	December	G. E.-Cater.
Pennsylvania	18	A1A-A1A	Passenger	Diesel-Elec.	315,100	2,250	August	Apr. '51	Electro-Motive
	12	B-B	Freight	Diesel-Elec.	244,600	1,600	August	Mar. '51	American-G. E.
	6	B-B	Freight	Diesel-Elec.	235,200	1,600	August	Mar. '51	American-G. E.
	44	B-B	Freight	Diesel-Elec.	257,800	1,600	August	Apr. '51	Baldwin-West.
	16	B-B	Freight	Diesel-Elec.	250,400	1,600	August	Apr. '51	Baldwin-West.
	68	B-B	Freight	Diesel-Elec.	234,000	1,500	August	May '51	Electro-Motive
	28	B-B	Freight	Diesel-Elec.	230,600	1,500	August	May '51	Electro-Motive
	15	B-B	Switching	Diesel-Elec.	243,000	1,600	August	Feb. '51	American-G. E.
	16	B-B	Switching	Diesel-Elec.	230,000	1,000	August	Apr. '51	American-G. E.
	13	B-B	Switching	Diesel-Elec.	199,900	660	August	Jan. '51	American-G. E.
	2	B-B	Switching	Diesel-Elec.	240,000	1,000	August	Feb. '51	American-G. E.
	18	B-B	Switching	Diesel-Elec.	230,000	1,200	August	Mar. '51	Baldwin-West.
	6	B-B	Switching	Diesel-Elec.	197,600	800	August	Jan. '51	Baldwin-West.
	1	B-B	Switching	Diesel-Elec.	230,000	1,200	August	Mar. 51	Baldwin-West.
	9	C-C	Switching	Diesel-Elec.	330,000	1,600	August	Apr. '51	Baldwin-West.
	14	C-C	Switching	Diesel-Elec.	360,000	2,400	August	Apr. '51	Baldwin-West.
	14	B-B	Switching	Diesel-Elec.	246,600	1,200	August	Mar. '51	Electro-Motive
	26	B-B	Switching	Diesel-Elec.	254,000	2,000	August	Apr. '51	Fairbanks, Morse-West.
	11	C-C	Switching	Diesel-Elec.	362,000	2,500	August	July '51	Lima-Hamilton
Peoria & Eastern	14	B-B	Rd.-Sw.	Diesel-Elec.	248,000	1,500	June	December	Electro-Motive
	7	B-B	Switching	Diesel-Elec.	246,000	1,200	June	November	Electro-Motive
Peoria & Pekin Union	3	B-B	Switching	Diesel-Elec.	248,000	1,200	March	.....	Electro-Motive
Philadelphia, Bethlehem & New England	2	B-B	Switching	Diesel-Elec.	248,000	1,200	January	.....	Electro-Motive
	2	B-B	Switching	Diesel-Elec.	248,000	1,200	August	.....	Electro-Motive
Pittsburgh & Lake Erie	10	B-B	Switching	Diesel-Elec.	246,000	1,200	October	Mar. '51	Electro-Motive
Pittsburgh & West Virginia	1	C-C	Switching	Diesel-Elec.	325,000	1,600	November	1951	Baldwin-West.
	2	B-B	Switching	Diesel-Elec.	250,000	2,000	March	Jan. '51	Fairbanks, Morse-West.
	4	B-B	Switching	Diesel-Elec.	250,000	2,000	September	Jan. '51	Fairbanks, Morse-West.
Pittsburgh, Chartiers & Youghiogheny	2	B-B	Switching	Diesel-Elec.	248,000	1,200	November	.....	Electro-Motive
Port Angeles Western	2	B-B	Switching	Diesel-Elec.	248,000	1,200	September	.....	Electro-Motive
Portland Terminal	4*	B-B	Switching	Diesel-Elec.	248,000	1,000	August	November	American-G. E.
	1*	B-B	Rd.-Sw.	Diesel-Elec.	248,000	1,500	August	December	Electro-Motive
Rahway Valley	1	B-B	Switching	Diesel-Elec.	140,000	660	September	Jan. '51	G. E.-Cooper-Bess.
Reading	10	B-B	Rd.-Sw.	Diesel-Elec.	247,000	1,600	September	Mar.-Apr. '51	American-G. E.
	10	B-B	Rd.-Sw.	Diesel-Elec.	247,000	1,600	September	Mar.-Apr. '51	Baldwin-West.
Richmond, Fredericksburg & Potomac	3	B-B	Frt.-Pass.	Diesel-Elec.	258,000	1,500	July	November	Electro-Motive
	2	B-B	Rd.-Sw.	Diesel-Elec.	244,000	1,500	July	December	Electro-Motive
River Terminal	2	B-B	Switching	Diesel-Elec.	248,000	1,200	October	.....	Electro-Motive
St. Joseph Terminal	2	B-B	Switching	Diesel-Elec.	198,000	600	January	.....	Electro-Motive
St. Louis, Brownsville & Mexico	2	B-B	Freight	Diesel-Elec.	223,560	1,500	January	April	Electro-Motive
	5	B-B	Rd.-Sw.	Diesel-Elec.	238,575	1,500	January	August	Electro-Motive
	2	B-B	Switching	Diesel-Elec.	229,800	1,000	January	April	Baldwin-West.
	7	B-B	Rd.-Sw.	Diesel-Elec.	240,000	1,500	October	Mar.-June '51	Baldwin-West.
	5	B-B	Switching	Diesel-Elec.	248,000	1,200	October	Apr.-June '51	Baldwin-West.
St. Louis-San Francisco	10	B-B	Freight	Diesel-Elec.	247,100	1,500	March	July	Electro-Motive
	18	B-B	Freight	Diesel-Elec	247,100	1,500	July	Oct.-Dec.	Electro-Motive
	25	B-B	Freight	Diesel-Elec.	247,100	1,500	July	Mar. '51	Electro-Motive
	3	A1A-A1A	Passenger	Diesel-Elec.	330,400	2,250	February	July	Electro-Motive
	6	B-B	Freight	Diesel-Elec.	230,850	1,500	March	May	Electro-Motive
	4	B-B	Switching	Diesel-Elec.	241,500	1,200	June	Feb. '51	Fairbanks, Morse-West.

*Leased from the Equitable Life Assurance Society.

Modern steam locomotives in service in Canada

Purchaser	No.	Wheel Arrangement	Service	Type	Weight Lb.	Horsepower	Date of Order	Date of Delivery	Builder Locomotive Builder Electrical Equipment Engine Builder
St. Louis-San Francisco (Cont.)	5	B-B	Switching	Diesel-Elec.	247,100	1,200	June	Feb. '51	Electro-Motive
	6	B-B	Passenger	Diesel-Elec.	230,850	1,500	July	December	Electro-Motive
	6	B-B	Passenger	Diesel-Elec.	230,850	1,500	November	Feb. '51	Electro-Motive
	25	B-B	Rd.-Sw.	Diesel-Elec.	240,000	1,500	October	.....	Electro-Motive
	14	B-B	Rd.-Sw.	Diesel-Elec.	240,000	1,500	November	.....	Electro-Motive
St. Louis Southwestern	2	B-B	Passenger	Diesel-Elec.	230,000	1,500	February	.....	Electro-Motive
	1	B-B	Passenger	Diesel-Elec.	258,000	1,500	February	.....	Electro-Motive
	4	B-B	Switching	Diesel-Elec.	248,000	1,200	February	.....	Electro-Motive
Santa Maria Valley	1	B-B	Switching	Diesel-Elec.	140,000	660	August	August	G. E.-Cooper-Bess.
Savannah & Atlanta	1	C-C	Rd.-Sw.	Diesel-Elec.	256,000	1,600	June	December	Baldwin-West.
Seaboard Air Line	3	B-B	Yd.-Sw.	Diesel-Elec.	240,000	1,000	February	February	Baldwin-West.
	14	B-B	Yd.-Sw.	Diesel-Elec.	236,900	1,000	June	August	Baldwin-West.
	10	B-B	Yd.-Sw.	Diesel-Elec.	.....	1,000	July	Oct.-Nov.	Baldwin-West.
	4	A1A-A1A	Rd.-Sw.	Diesel-Elec.	249,900	1,600	February	Mar.-Apr.	American-G. E.
	1	A1A-A1A	Rd.-Sw.	Diesel-Elec.	234,810	1,600	February	Mar.-Apr.	American-G. E.
	4	A1A-A1A	Rd.-Sw.	Diesel-Elec.	.....	1,600	July	Nov.-Dec.	American-G. E.
	3	A1A	Rd.-Sw.	Diesel-Elec.	.....	1,600	August	Dec. '50-Jan. '51	American-G. E.
	6	B-B	Rd.-Sw.	Diesel-Elec.	229,250	1,600	February	Mar.-Apr.	American-G. E.
	18	B-B	Rd.-Sw.	Diesel-Elec.	238,000	1,600	February	Mar.-Apr.	American-G. E.
	19	B-B	Rd.-Sw.	Diesel-Elec.	.....	1,600	July	Nov.-Dec.	American-G. E.
	17	B-B	Rd.-Sw.	Diesel-Elec.	.....	1,600	August	Dec. '50-Jan. '51	American-G. E.
	4	B-B	Yd.-Sw.	Diesel-Elec.	240,000	1,500	February	Apr.-May	Electro-Motive
	8	B-B	Yd.-Sw.	Diesel-Elec.	246,000	1,500	February	Apr.-May	Electro-Motive
	18	B-B	Rd.-Sw.	Diesel-Elec.	240,000	1,500	February	Apr.-May	Electro-Motive
	23	B-B	Rd.-Sw.	Diesel-Elec.	246,800	1,500	July	Nov.-Dec.	Electro-Motive
	30	B-B	Rd.-Sw.	Diesel-Elec.	240,000	1,500	August	Jan.-Feb. '51	Electro-Motive
	6	A1A-A1A	Pass. "A"	Diesel-Elec.	321,000	2,250	August	October	Electro-Motive
	1	B	Switching	Diesel-Hyd.	50,000	190	April	June	Whit.-Hercules
Southern	7	B-B	Freight	Diesel-Elec.	246,000	1,500	January	April	Electro-Motive
	4	B-B	Freight	Diesel-Elec.	246,000	1,500	January	April	Electro-Motive
	10	B-B	Frt.-Pass.	Diesel-Elec.	229,000	1,500	January	Apr.-May	Electro-Motive
	10	B-B	Frt.-Pass.	Diesel-Elec.	229,000	1,500	April	Nov.-Dec.	Electro-Motive
	6	B-B	Freight	Diesel-Elec.	246,000	1,500	April	Nov.-Dec.	Electro-Motive
	8	B-B	Switching	Diesel-Elec.	230,000	1,600	April	October	American-G. E.
	8	B-B	Freight	Diesel-Elec.	246,000	1,500	April	Nov.-Dec.	Electro-Motive
	6	B-B	All-Purpose	Diesel-Elec.	246,000	1,600	April	December	Fairbanks, Morse-West.
	7	A1A-A1A	Passenger	Diesel-Elec.	316,500	2,250	November	Se.-Oct. '50	Electro-Motive
	24	B-B	Freight	Diesel-Elec.	246,000	1,500	November	May-June '51	Electro-Motive
	19	B-B	Freight	Diesel-Elec.	246,000	1,500	November	May-June '51	Electro-Motive
	25	B-B	Gen.-Purpose	Diesel-Elec.	240,000	1,500	November	Apr.-May-June '51	Electro-Motive
	15	B-B	Switching	Diesel-Elec.	230,000	1,600	November	Jul.-Au. '50	American-G. E.
	10	B-B	All-Purpose	Diesel-Elec.	246,000	1,600	November	Sept. '51	Fairbanks, Morse-West.
Southern Pacific	22	4(B-B)	Freight	Diesel-Elec.	936,100	6,000	March	4th qtr.	Electro-Motive
	12	C-C	Freight	Diesel-Elec.	325,000	1,500	March	Aug.-Sept.	Baldwin-West.
	2	3(A1A-A1A)	Passenger	Diesel-Elec.	918,000	6,000	March	Aug.-Sept.	American-G. E.
	9	C-C	Freight	Diesel-Elec.	323,300	1,600	September	Ja.-Feb. '50	Baldwin-West.
	3	2(C-C)	Freight	Diesel-Elec.	750,000	3,200	September	Feb. '51	Baldwin-West.
	1	2(C-C)	Freight	Diesel-Elec.	646,600	3,200	September	Mar. '51	Baldwin-West.
	1	C-C	Freight	Diesel-Elec.	323,300	1,600	September	Apr. '51	Baldwin-West.
	22	B-B	Switching	Diesel-Elec.	229,100	1,200	September	1950-51	Baldwin-West.
	10	B-B	Switching	Diesel-Elec.	197,800	660	September	Fe.-Ma. '50	American-G. E.
Spokane, Portland & Seattle	1	4(B-B)	Freight	Diesel-Elec.	936,000	6,000	July	December	American-G. E.
	1	4(B-B)	Freight	Diesel-Elec.	936,000	6,000	March	July	American-G. E.
	1	4(B-B)	Freight	Diesel-Elec.	936,000	6,000	January	January	American-G. E.
	1	4(B-B)	Freight	Diesel-Elec.	936,000	6,000	January	January	American-G. E.
	1	B-B	Switching	Diesel-Elec.	230,000	1,600	October	December	American-G. E.
Skaneateles Short Line	1	B-B	Switching	Diesel-Elec.	88,000	380	September	December	G. E.-Cater.
Tennessee Central	4	B-B	Rd.-Sw.	Diesel-Elec.	240,000	1,600	June	November	American-G. E.
Terminal R. R. Assn. of St. Louis	4	B-B	Switching	Diesel-Elec.	.....	1,600	August	December	American-G. E.
	4	B-B	Switching	Diesel-Elec.	.....	1,200	August	Feb. '51	Lima-Hamilton
Texas Mexican	2	B-B	Rd.-Sw.	Diesel-Elec.	240,000	1,500	March	.....	Electro-Motive
	1	B-B	Rd.-Sw.	Diesel-Elec.	240,000	1,500	November	.....	Electro-Motive
Texas & Pacific	19	B-B	Freight	Diesel-Elec.	230,000	1,500	March	.....	Electro-Motive
	4	B-B	Switching	Diesel-Elec.	248,000	1,200	March	.....	Electro-Motive
Toledo, Peoria & Western	1	B-B	Switching	Diesel-Elec.	239,000	1,000	October	December	Lima-Hamilton-West.
Toledo Terminal	2	B-B	Switching	Diesel-Elec.	230,000	1,000	October	1st qtr. '51	American-G. E.
Union (Pittsburgh)	3	C-C	Switching	Diesel-Elec.	360,000	1,600	September	Feb. '51	Baldwin-West.
	2	B-B	Switching	Diesel-Elec.	230,000	1,000	September	Feb. '51	American-G. E.
	2	B-B	Switching	Diesel-Elec.	250,000	1,200	September	Apr. '51	Electro-Motive
	2	2(B-B)	Switching	Diesel-Elec.	496,000	2,400	April	Mar. '51	Electro-Motive
Union Pacific	5	2(A1A-A1A)	Passenger	Diesel-Elec.	.....	4,500	January	August	Electro-Motive
	25	.....	Switching	Diesel-Elec.	.....	1,200	January	2nd half '50	Electro-Motive
	3	.....	Rd.-Sw.	Diesel-Elec.	.....	1,600	August	August	Fairbanks, Morse-West.
	5	3(B-B)	Freight	Diesel-Elec.	.....	4,500	November	Mar. '51	Electro-Motive
	10	B-B+B-B	Freight	Gas Turbine-Electric	500,000	.....	December	1951	General Electric-American
Upper Merion & Plymouth	1	B-B	Switching	Diesel-Elec.	88,000	380	August	Jan. '51	G. E.-Cater.
Wabash	1	3(B-B)	Freight	Diesel-Elec.	.....	4,500	April	June	Electro-Motive
	15	2(B-B)	Freight	Diesel-Elec.	.....	3,000	April	June-July	Electro-Motive
	3	B-B	Rd.-Sw.	Diesel-Elec.	.....	1,500	April	Aug.-Sept.	Electro-Motive
	8	B-B	Switching	Diesel-Elec.	.....	1,200	April	July	Electro-Motive
	2	B-B	Switching	Diesel-Elec.	.....	800	April	October	Electro-Motive
	10	2(B-B)	Freight	Diesel-Elec.	.....	3,000	May	Dec. '50-1st qtr. '51	G. M. Diesel, Ltd.
	1	B-B	Rd.-Sw.	Diesel-Elec.	.....	1,500	May	Jan. '51	G. M. Diesel, Ltd.
	3	B-B	Switching	Diesel-Elec.	.....	800	May	Jan. '51	G. M. Diesel, Ltd.
	7	B-B	Switching	Diesel-Elec.	.....	1,200	March	April-May	Lima-Hamilton
	5	B-B	Switching	Diesel-Elec.	.....	1,200	August	November	Lima-Hamilton
	12	2(B-B)	Freight	Diesel-Elec.	.....	3,000	November	1951	Electro-Motive
	3	A1A-A1A	Passenger	Diesel-Elec.	.....	2,250	November	1951	Electro-Motive
	1	2(A1A-A1A)	Passenger	Diesel-Elec.	.....	4,500	November	1951	Electro-Motive
	10	B-B	Rd.-Sw.	Diesel-Elec.	.....	1,500	November	1951	Electro-Motive
	4	B-B	Switching	Diesel-Elec.	.....	1,200	November	1951	Electro-Motive
	2	B-B	Switching	Diesel-Elec.	.....	800	November	1951	Electro-Motive
Washington & Old Dominion	1	B-B	Switching	Diesel-Elec.	150,000	675	August	November	Whit.-West.-Cut. Hammer-Superior
Western Maryland	2	B-B	Switching	Diesel-Elec.	230,000	1,000	July	November	American-G. E.
	4	B-B	Freight	Diesel-Elec.	248,000	1,600	August	December	American-G. E.
	4	B-B	Rd.-Sw.	Diesel-Elec.	236,000	1,600	August	Dec. '50-Jan. '51	Baldwin-West.
	7	B-B	Freight	Diesel-Elec.	248,000	1,500	July	Nov.-Dec.	Electro-Motive
	4	B-B	Rd.-Sw.	Diesel-Elec.	240,000	1,500	April	.....	Electro-Motive
	4	3(B-B)	Freight	Diesel-Elec.	690,000	4,500	March	.....	Electro-Motive
Western Pacific	3	4(B-B)	Freight	Diesel-Elec.	.....	6,000	November	July '51	Electro-Motive
	2	B-B	Switching	Diesel-Elec.	.....	1,000	November	June '51	Electro-Motive
Western of Alabama	2	B-B	Gen. Purpose	Diesel-Elec.	227,000	1,500	March	September	Electro-Motive

Other Orders — For Service in the United States

Purchaser	No.	Wheel Arrangement	Service	Type	Weight Lb.	Horsepower	Date of Order	Date of Delivery	Builder Locomotive Builder Electrical Equipment Engine Builder
Alabama Power Co.	3	B-B	Switching	Diesel-Elec.	130,000	480	March	September	Whit.-West.-Hercules
Alan Wood Steel Co.	1	B	Switching	Diesel-Elec.	100,000	300	April	November	G. E.-Cummins
Allegheny Ludlum Steel Co.	1	B-B	Switching	Diesel-Elec.	130,000	550	February	March	G. E.-Cummins
	1	B-B	Switching	Diesel-Elec.	130,000	550	October	Apr. '51	G. E.-Cummins
American Cyanamid Co.	1	B-B	Switching	Diesel-Elec.	198,500	750	January	March	Baldwin-West.
Anaconda Copper Mining Co.	5	B	Switching	Diesel-Elec.	40,000	150	May	.....	Whit.-West.-Cummins
	2	B	Switching	Diesel-Elec.	70,000	300	May	.....	Whit.-West.-Cummins
Atlantic Creosoting	1	B	Switching	Diesel-Elec.	50,000	150	October	November	G. E.-Cummins
Bethlehem Steel Co.	1	B-B	Switching	Diesel-Elec.	130,000	550	August	October	G. E.-Cummins
Birdsboro Slag	1	B	Switching	Diesel-Elec.	50,000	150	November	Feb. '51	G. E.-Cummins
Bucyrus-Erie Co.	1	B	Switching	Diesel-Elec.	70,000	275	November	Aug. '51	G. E.-Cummins
Budd Co.	1	B	Switching	Diesel-Elec.	50,000	150	June	July	G. E.-Cummins
Buffalo Slag	1	B-B	Switching	Diesel-Elec.	160,000	550	August	Mar. '51	G. E.-Cummins
Camden Coke	1	B	Switching	Diesel-Elec.	50,000	150	March	May	G. E.-Cummins
Carbon Limestone Co.	4	B	Switching	Diesel-Hyd.	50,000	190	July	November	Whit.-Hercules
Carnegie-Illinois Steel Corp.	2	B+B	Switching	Diesel-Elec.	100,000	380	August	May '51	G. E.-Cummins
	1	B+B	Switching	Diesel-Elec.	100,000	380	August	June '51	G. E.-Cummins
	1	B+B	Switching	Diesel-Elec.	100,000	300	October	May '51	G. E.-Cummins
	1	B-B	Switching	Diesel-Elec.	230,000	800	November	.....	Electro-Motive
Carolina Power & Light Co.	1	B	Switching	Diesel-Elec.	50,000	150	September	November	G. E.-Cummins
	1	B	Switching	Diesel-Elec.	70,000	275	November	Aug. '51	G. E.-Cummins
Central Hudson Gas & Electric Co.	1	B	Switching	Diesel-Elec.	50,000	150	March	Feb. '51	G. E.-Cummins
Christopher Coal Co.	1	B-B	Mine	Electric	74,000	400	August	May '51	General Electric
Cleveland Electric Illuminating Co.	1	B-B	Switching	Diesel-Elec.	130,000	550	October	Mar. '51	G. E.-Cummins
	1	B-B	Switching	Diesel-Elec.	190,000	660	October	Feb. '51	G. E.-Cooper-Bess.
Colorado Fuel & Iron Corp.	1	B	Switching	Diesel-Elec.	50,000	150	September	October	G. E.-Cummins
	2	B-B	Rd.-Sw.	Diesel-Elec.	240,000	1,500	August	.....	Electro-Motive
Columbia Steel Co.	1	B-B	Switching	Diesel-Elec.	160,000	550	March	August	G. E.-Cummins
Consolidated Coal Co.	1	B-B	Mine	Electric	60,000	400	August	June '51	General Electric
Consumers Power Co.	1	B	Switching	Diesel-Elec.	50,000	150	September	November	G. E.-Cummins
A. B. Cook Co.	1	B	Switching	Diesel-Elec.	50,000	150	May	May	G. E.-Cummins
Crucible Steel Co.	4	B-B	Switching	Diesel-Elec.	190,000	660	March	Sept.-Oct.	G. E.-Cooper-Bess.
Dayton Power & Light Co.	1	B-B	Switching	Diesel-Elec.	160,000	550	March	April	G. E.-Cummins
Detroit Edison Co.	1	B-B	Switching	Diesel-Elec.	198,000	600	September	.....	Electro-Motive
Dewey Portland Cement Co.	1	B-B	Switching	Diesel-Elec.	90,000	300	August	Jan. '51	G. E.-Cummins
Duke Power Co.	1	B	Switching	Diesel-Elec.	50,000	150	January	January	G. E.-Cummins
	1	B	Switching	Diesel-Elec.	50,000	150	May	May	G. E.-Cummins
	1	B	Switching	Diesel-Elec.	50,000	150	.....	June	G. E.-Cummins
	1	B	Switching	Diesel-Elec.	50,000	150	September	October	G. E.-Cummins
E. I. du Pont de Nemours & Co.	1	B-B	Switching	Diesel-Elec.	90,000	300	August	September	G. E.-Cummins
	1	B-B	Switching	Diesel-Elec.	90,000	...	September	Mar. '51	G. E.-Cummins
Empire Steel Co.	1	B-B	Switching	Diesel-Elec.	160,000	550	August	Apr. '51	G. E.-Cummins
Ethyl Corp.	1	B-B	Switching	Diesel-Elec.	90,000	300	August	Jan. '51	G. E.-Cummins
General American Transportation Corp.	1	B	Switching	Diesel-Hyd.	50,000	190	March	.....	Whit.-Hercules
	1	B	Switching	Diesel-Elec.	50,000	190	February	.....	Whit.-West.-Hercules
	1	B-B	Switching	Diesel-Elec.	130,000	480	June	.....	Whit.-West.-Hercules
Georgia Power Co.	1	B-B	Switching	Diesel-Elec.	90,000	300	October	Mar. '51	G. E.-Cummins
Great Lakes Steel Corp.	1	B-B	Switching	Diesel-Elec.	198,000	600	October	.....	Electro-Motive
Hooker Electrochemical Co.	1	B	Switching	Diesel-Elec.	50,000	150	August	October	G. E.-Cummins
Illinois Power Co.	1	B-B	Switching	Diesel-Elec.	130,000	550	September	Aug. '51	G. E.-Cummins
Inland Steel Corp.	2	B-B	Switching	Diesel-Elec.	198,000	600	August	.....	Electro-Motive
	3	B-B	Switching	Diesel-Elec.	198,000	600	September	.....	Electro-Motive
Jacksonville, Fla.	1	B-B	Switching	Diesel-Elec.	160,000	550	February	March	G. E.-Cummins
Jamison Coal Co.	2	B	Mine	Electric	60,000	400	March	Feb. '51	General Electric
C. D. Johnson Lumber Corp.	1	B-B	Switching	Diesel-Elec.	90,000	300	October	Jan. '51	G. E.-Cummins
Jones & Laughlin Steel Corp.	6	B-B	Switching	Diesel-Elec.	160,000	550	October	.....	Whit.-West.-Cummins
	1	B	Haul	Electric	50,000	250	September	Apr. '51	General Electric
Kennecott Copper Corp.	1	B	Switching	Diesel-Elec.	50,000	150	February	February	G. E.-Cummins
	4	B+B	Open Pit	Electric	250,000	2,000	August	July '51	General Electric
	1	B	Mine	Electric	40,000	250	March	October	General Electric
Keystone Steel & Wire Co.	1	B-B	Switching	Diesel-Elec.	130,000	400	January	January	Whit.-West.-Cummins
	1	B-B	Switching	Diesel-Elec.	130,000	480	March	July	Whit.-West.-Hercules
Laclede Steel Co.	2	B-B	Switching	Diesel-Elec.	90,000	380	June	June	G. E.-Cummins
Lehigh Coal & Navigation Co.	1	B-B	Switching	Diesel-Elec.	90,000	300	September	September	G. E.-Cummins
Lone Star Cement Corp.	1	B	Switching	Diesel-Elec.	50,000	150	March	April	G. E.-Cummins
Lukens Steel Co.	2	B	Switching	Diesel-Elec.	60,000	275	August	1951	G. E.-Cummins
Mifflin Sand Co.	1	B	Switching	Diesel-Hyd.	40,000	190	October	.....	Whit.-Hercules
National Tube Co.	8	B	Switching	Diesel-Elec.	100,000	300	March	Oct.-Nov.	G. E.-Cummins
New York & Pennsylvania Co.	1	B	Switching	Diesel-Elec.	50,000	150	November	Feb. '51	G. E.-Cummins
Niagara Mohawk Power Co.	1	B-B	Switching	Diesel-Elec.	100,000	300	March	May	G. E.-Cummins
Northern States Power Co.	1	B-B	Switching	Diesel-Elec.	90,000	300	September	Mar. '51	G. E.-Cummins
Ohio Power Co.	1	B-B	Switching	Diesel-Elec.	130,000	550	April	April	G. E.-Cummins
Oliver Iron Mining Co.	2	B-B	Switching	Diesel-Elec.	140,000	660	February	March	G. E.-Cooper-Bess.
	8	B-B	Switching	Diesel-Elec.	236,000	800	November	1951	Baldwin-West.
Penn Power Co.	1	B	Switching	Diesel-Elec.	50,000	150	September	November	G. E.-Cummins
Petoskey Portland Cement Co.	1	B-B	Switching	Diesel-Elec.	90,000	300	July	August	G. E.-Cummins
Phelps Dodge Corp.	1	B-B	Freight	Electric	250,000	840	August	.....	Baldwin-West.
	1	B-B	Switching	Diesel-Elec.	248,000	1,200	November	.....	Electro-Motive
Philadelphia Coke Co.	1	B-B	Switching	Diesel-Elec.	90,000	300	April	June	G. E.-Cummins
Philadelphia Electric Co.	1	B-B	Switching	Diesel-Elec.	90,000	300	July	November	Whit.-West.-Cummins
	1	B	Switching	Diesel-Elec.	50,000	150	September	November	Whit.-West.-Cummins
Pine Flat Dam Contr.	4	B-B	Switching	Diesel-Elec.	88,000	380	July	1950	G. E.-Cater.
Pittsburgh Plate Glass Co.	1	B-B	Switching	Diesel-Elec.	190,000	660	September	Jan. '51	G. E.-Cooper-Bess.
	1	B-B	Switching	Diesel-Elec.	100,000	300	September	Mar. '51	G. E.-Cummins
Pittsburgh Steel Co.	1	B-B	Switching	Diesel-Elec.	248,000	1,200	September	.....	Electro-Motive
	1	B-B	Switching	Diesel-Elec.	230,000	800	September	.....	Electro-Motive
Raymond City Coal Co.	1	B	Switching	Diesel-Elec.	50,000	150	June	June	G. E.-Cummins
Republic Steel Corp.	1	B	.....	Electric	40,000	150	January	July	General Electric
	1	B-B	Switching	Diesel-Elec.	198,000	600	June	.....	Electro-Motive
	1	B-B	Switching	Diesel-Elec.	198,000	600	July	.....	Electro-Motive
	1	B-B	Switching	Diesel-Elec.	198,000	600	November	.....	Electro-Motive
Riegel Paper Co.	1	B-B	Switching	Diesel-Elec.	90,000	300	August	December	G. E.-Cummins
Rochester & Pittsburgh Coal Co.	2	B	Mine	Electric	40,000	300	September	May '51	General Electric
Rotary Steel Co.	1	B-B	Switching	Diesel-Elec.	90,000	300	September	Jan. '51	G. E.-Cummins
St. Joseph Lead Co.	1	B-B	Switching	Diesel-Elec.	190,000	660	October	Feb. '51	G. E.-Cooper-Bess.
Semet-Solvay Co.	1	B-B	Switching	Diesel-Elec.	160,000	550	May	August	G. E.-Cummins
	1	B	Mine	Electric	60,000	400	January	August	General Electric
Sharon Steel Corp.	1	B-B	Switching	Diesel-Elec.	240,000	1,200	November	1951	Baldwin-West.
Sheffield Steel Corp.	1	B-B	Switching	Diesel-Elec.	88,000	380	July	October	G. E.-Cater.
	2	B-B	Switching	Diesel-Elec.	160,000	550	November	May '51	G. E.-Cummins
Shenango Furnace Co.	1	B-B	Switching	Diesel-Elec.	160,000	550	October	Apr. '51	G. E.-Cummins
Solvay Process Division, Allied Chem. & Dye	2	B-B	Switching	Diesel-Elec.	160,000	550	August	1950-51	G. E.-Cummins
Southern Clays	1	B	Switching	Diesel-Elec.	50,000	150	September	Feb. '51	G. E.-Cummins
Southwest Steel Co.	1	B-B	Switching	Diesel-Elec.	90,000	300	June	June	G. E.-Cummins
Standard Slag Co.	4	B	Switching	Diesel-Hyd.	80,000	243	August	.....	Whit.-Cummins
Tennessee Coal, Iron & R. R. Co.	2	B-B	Switching	Diesel-Elec.	160,000	550	October	Apr. '51	G. E.-Cummins
	5	B-B	Switching	Diesel-Elec.	240,000	1,200	July	October	Baldwin-West.
	2	C-C	Switching	Diesel-Elec.	325,000	1,600	July	October	Baldwin-West.
	3	B-B	Switching	Diesel-Elec.	240,000	1,200	October	1951	Baldwin-West.
	3	C-C	Switching	Diesel-Elec.	325,000	1,600	October	1951	Baldwin-West.
	5	B-B	Switching	Diesel-Elec.	230,000	800	July	.....	Electro-Motive

Purchaser	No.	Wheel Arrange-ment	Service	Type	Weight Lb.	Horse-power	Date of Order	Date of Delivery	Builder Locomotive Builder Electrical Equipment Engine Builder
Tennessee Products & Chemical Corp.	1	B-B	Switching	Diesel-Elec.	160,000	550	April	July	G. E.-Cummins
	1	B-B	Switching	Diesel-Elec.	160,000	550	November	Apr. '51	G. E.-Cummins
Tennessee Valley Authority	2	B-B	Switching	Diesel-Elec.	160,000	550	August	October	G. E.-Cummins
Timken Roller Bearing Co.	1	B-B	Switching	Diesel-Elec.	140,000	660	July	December	G. E.-Cooper-Bess.
United States Army	1	B-B	Switching	Diesel-Elec.	230,000	1,000	February	May	Baldwin-West.
Warner Co.	1	B-B	Switching	Diesel-Elec.	198,500	750	January	April	Baldwin-West.
Weirton Steel Co.	1	B-B	Switching	Diesel-Elec.	100,000	300	June	July	G. E.-Cummins
Weyerhaeuser Timber Co.	2	B-B	Switching	Diesel-Elec.	198,500	750	November	November	Baldwin-West.
	1	B-B	Switching	Diesel-Elec.	246,000	1,200	August	June '51	Fairbanks, Morse
	2	B-B	Switching	Diesel-Elec.	248,000	1,200	September	.....	Electro-Motive
Wheeling Steel Corp.	1	B-B	Switching	Diesel-Elec.	130,000	480	February	October	Whit.-West.-Hercules
	2	B-B	Switching	Diesel-Elec.	230,000	800	August	.....	Electro-Motive
Wisconsin Steel Co.	1	B	Switching	Diesel-Elec.	50,000	150	May	July	G. E.-Cummins
Woodward Iron Co.	2	B-B	Switching	Diesel-Elec.	248,000	1,200	June	.....	Electro-Motive
Worcester Electric Co.	1	B-B	Switching	Diesel-Elec.	130,000	550	June	September	G. E.-Cummins
Youngstown Sheet & Tube Co.	3	B-B	Switching	Diesel-Elec.	198,000	750	July	1951	Baldwin-West.

For Export

Purchaser	No.	Wheel Arrange-ment	Service	Type	Weight Lb.	Horse-power	Date of Order	Date of Delivery	Builder Locomotive Builder Electrical Equipment Engine Builder
Abitibi Power & Paper Co., (Canada)	1	B-B	Switching	Diesel-Elec.	100,000	300	September	Jan. '51	G. E.-Cummins
Algerian R. R.	4	A1A	Switching	Diesel-Elec.	250,000	1,600	August	1951	Baldwin-West.
	5	.....	Rd.-Sw.	Diesel-Elec.	.....	1,600	.....	.....	American-G. E.
Algoma Steel Corp., (Canada)	7	B-B	Switching	Diesel-Elec.	160,000	550	August	1950-51	G. E.-Cummins
	2	B-B	Switching	Diesel-Elec.	100,000	300	September	Feb. '51	G. E.-Cummins
Altos Hornos de Mexico	1	.....	Switching	Diesel-Elec.	.....	1,000	.....	.....	American-G. E.
American Smelting & Refining Co., (For Mexico)	1	B-B	Switching	Diesel-Elec.	230,000	1,000	February	February	Baldwin-West.
Anglo-American Copper Co., (South Africa)	3	B-B	Switching	Diesel-Elec.	130,000	550	March	December	G. E.-Cummins
Baldwin Locomotive Works For Cia. Carrion for Authoridad de Tierres (Puerto Rico)	3	C	Switching	Diesel-Hyd.	60,000	243	August	.....	Whit.-Cummins
For Representaciones Tecnicas (Chile)	2	B	Switching	Diesel-Mech.	50,000	190	November	.....	Whit.-Cater.
For Usines Gustave Boel (Belgium)	1	B	Switching	Diesel-Elec.	50,000	190	February	.....	Whit.-Hercules
	3	B	Switching	Diesel-Elec.	70,000	240	February	.....	Whit.-Hercules
For Haiti	1	B-B	Switching	Diesel-Elec.	100,000	300	July	.....	Whit.-Cummins
For Corp. Ind. del Cuba Tropico	1	B-B	Switching	Diesel-Elec.	130,000	480	October	.....	Whit.-Hercules
Cia. Bananera (Costa Rica)	4	B-B	Switching	Diesel-Elec.	130,000	660	September	June '51	G. E.-Cooper-Bess.
Belgium Docks	1	B	Switching	Diesel-Elec.	50,000	150	February	April	G. E.-Cummins
Bethlehem Chile Iron Mines Co.	3	B-B	Switching	Diesel-Elec.	160,000	550	October	Nov. '51	G. E.-Cummins
British Columbia Electric Ry.	1	B-B	Switching	Diesel-Elec.	140,000	660	April	May	G. E.-Cooper-Bess.
Canada Cement Co.	1	B-B	Switching	Diesel-Elec.	100,000	300	May	May	G. E.-Cummins
Central of Uruguay	3	.....	Rd.-Sw.	Diesel-Elec.	.....	1,600	.....	.....	American-G. E.
Chemical Lime, Ltd., (Canada)	1	B	Switching	Diese.-Elec.	50,000	150	September	November	G. E.-Cummins
Consolidated of Cuba	12	.....	Freight	Diesel-Elec.	.....	1,600	.....	1951	American-G. E.
Cuban-American Mercantile Corp.	2	B-B	Switching	Diesel-Elec.	100,000	500	September	.....	Whit.-Cater.
Dominican Sales (Cuba)	1	B-B	Switching	Diesel-Elec.	140,000	660	October	Feb. '51	G. E.-Cooper-Bess.
Dominion Steel & Foundries (Canada)	1	B	.....	Electric	50,000	150	October	Nov. '51	General Electric
Electro Metallurgical Co. of Canada	1	B-B	Switching	Diesel-Elec.	190,000	660	August	Feb. '51	G. E.-Cooper-Bess.
	1	B-B	Switching	Diesel-Elec.	190,000	660	September	Feb. '51	G. E.-Cooper-Bess.
Fraser Companies (Canada)	1	B-B	Switching	Diesel-Elec.	130,000	550	September	December	G. E.-Cummins
General Supply Co. of Canada	1	B	Switching	Diesel-Elec.	40,000	190	November	.....	Whit.-Hercules
International General Electric Co., For France	2	B	Switching	Diesel-Elec.	88,000	300	February	1950	G. E.-Cummins
For Guatemala	1	B	Switching	Diesel-Elec.	50,000	150	September	December	G. E.-Cummins
For National Rys. of Colombia	5	C+B+C	Passenger	Diesel-Elec.	240,000	1,200	October	4th qtr. '51	American-G. E.
For Arabian American Oil Co.	1	B	Switching	Diesel-Elec.	50,000	150	March	April	G. E.-Cummins
For the Argentine National	30	.....	.....	Diesel-Elec.	.....	1,400	November	1952	American-G. E.
Liberia Mining Co.	2	B-B	Switching	Diesel-Elec.	150,000	675	May	.....	Whit.-Superior
Mexico	1	B-B	Switching	Diesel-Elec.	130,000	550	September	Mar. '51	G. E.-Cummins
Moroccan R. R.	2	C-C	Switching	Diesel-Elec.	261,000	1,500	August	1951	Baldwin-West.
National Harbors Board (Canada)	1	B-B	Switching	Diesel-Elec.	160,000	550	July	September	G. E.-Cummins
National of Mexico	2	.....	Road	Diesel-Elec.	.....	1,600	.....	.....	American-G. E.
Nizam Sugar Factory, Ltd., (India)	1	B	Switching	Diesel-Hyd.	50,000	240	January	August	Whit.-Hercules
North American Cyanamid, Ltd., (Canada)	1	B-B	Switching	Diesel-Elec.	130,000	550	August	October	G. E.-Cummins
	1	B-B	Switching	Diesel-Elec.	90,000	300	August	December	G. E.-Cummins
Paulista (Brazil)	5	2-D+2-D	Freight	Electric	500,000	5,500	September	1st qtr. '51	General Electric
	12	.....	Rd.-Sw.	Diesel-Elec.	.....	1,600	.....	.....	American-G. E.
Portuguese State Rys.	12	C-C	.....	Diesel-Elec.	208,000	1,350	October	.....	Whit.-Superior
	5	.....	Rd.-Sw.	Diesel-Elec.	.....	1,600	.....	.....	American-G. E.
Quebec Iron & Titanium Corp.	1	B-B	Switching	Diesel-Elec.	90,000	300	April	May	G. E.-Cummins
Royal State Railway (Thailand)	30	.....	Road	Diesel-Elec.	156,000	1,000	July	1951	Davenport Bes.-Cater.
	15	.....	Road	Diesel-Elec.	106,000	500	July	1951	Davenport Bes.-Cater.
San Vincente Steel (Chile)	2	B-B	Switching	Diesel-Elec.	90,000	300	October	June '51	G. E.-Cummins
South Porto Rico Sugar Co.	1	B-B	Switching	Diesel-Elec.	88,000	380	April	December	G. E.-Cater.
	2	B-B	Switching	Diesel-Elec.	140,000	660	August	September	G. E.-Cooper-Bess.
Spruce Falls Power & Paper Co., (Canada)	1	B-B	Switching	Diesel-Elec.	140,000	660	February	February	G. E.-Cooper-Bess.
Steel Company of Canada	1	B-B	Switching	Diesel-Elec.	130,000	550	April	April	G. E.-Cummins
	2	B-B	Switching	Diesel-Elec.	160,000	550	August	December	G. E.-Cummins
United Fruit Co.	4	B-B	Switching	Diesel-Elec.	88,000	380	March	September	G. E.-Cater.
Uruguay State Rys.	3	B-B	Switching	Diesel-Elec.	88,000	380	September	July '51	G. E.-Cater.
	20	C-C	.....	Diesel-Elec.	224,000	1,400	September	1951-52	American-G. E.
Venezuela State Rys.	8	C+C	Rd.-Sw.	Diesel-Elec.	136,400	730	March	Mid-'51	G. E.-Cater.

Canada

Purchaser	No.	Wheel Arrange-ment	Service	Type	Weight Lb.	Horse-power	Date of Order	Date of Delivery	Builder Locomotive Builder Electrical Equipment Engine Builder
Algoma Central & Hudson Bay	5	.....	Rd.-Sw.	Diesel-Elec.	258,000	1,500	June	Feb. '51	G. M. Diesel, Ltd.
Canadian National	8	B-B	Freight	Diesel-Elec.	.....	1,600	September	Ja.-Feb. '51	Montreal Locomotive
	28	B-B	Freight	Diesel-Elec.	.....	1,500	October	Fe.-Apr. '51	G. M. Diesel, Ltd.
	12	B-B	Freight	Diesel-Elec.	.....	1,600	October	Ma.-Ap. '51	Montreal Locomotive
	22	B-B	Switching	Diesel-Elec.	.....	800	July	Ja.-Apr. '51	G. M. Diesel, Ltd.
	15	A1A-A1A	Pass.-Frt.	Diesel-Elec.	.....	1,000	September	May-Aug. '51	Canadian Locomotive
	3	A1A-A1A	Passenger	Diesel-Elec.	.....	1,000	September	May '51	Canadian Locomotive
Canadian Tube & Steel Co.	1	B	Switching	Diesel-Elec.	70,000	240	May	November	Canadian Locomotive
Canadian Westinghouse Co.	1	B-B	Switching	Diesel-Elec.	100,000	350	June	July	Canadian Locomotive
Ontario Paper Co.	1	B-B	Switching	Diesel-Elec.	100,000	350	March	June	Canadian Locomotive
Pacific Great Eastern	6	.....	.....	Diesel-Elec.	.....	1,600	November	Ja.-Feb. '51	Montreal Locomotive

EQUIPMENT PRICES REPORTED IN 1950

Unit prices of typical locomotives and passenger-train and freight-train cars purchased in the United States by Class I railroads in 1950 are listed in the accompanying tables. The data, as in previous years, was taken from Interstate Commerce Commission reports authorizing railroads to issue and sell equipment trust certificates and notes, proceeds from the sale of which were used to acquire equipment. The relatively small number of freight-train cars for which financing was arranged reflects the few purchases of such equipment in 1949.

What are apparently large variations in the prices of similar kinds of equipment are largely caused by differences in the numbers and types of specialties and materials ordered by the purchaser.

Locomotive Prices

No. Bought	Type	Service	Horsepower	Price
4	Diesel-Elec.	Sw.	1,000-hp.	$ 97,843
9	Diesel-Elec.	Rd.-Sw.	1,500-hp.	135,625
7	Diesel-Elec.	Transfer	2,000-hp.	197,274
3	Diesel-Elec.	Rd.-Sw.	1,600-hp.	148,982
5	Diesel-Elec.	Rd.-Sw.	1,000-hp.	122,710
4	Diesel-Elec.	Gen. Purpose	1,600-hp.	160,410
5	Diesel-Elec.	Rd.-Sw.	1,600-hp.	143,635
4	Diesel-Elec.	Sw.	1,220-hp.	97,500
3	Diesel-Elec.	Sw.	1,000-hp.	97,500
9	Diesel-Elec.	Frt.	4,500-hp.	448,894
16	Diesel-Elec.	Transfer	1,600-hp.	170,776
1	Diesel-Elec.	Sw.	1,200-hp.	100,760
4	Diesel-Elec.	Rd.-Sw.	1,500-hp.	154,711
2	Diesel-Elec.	Transfer	2,400-hp.	203,000
10	Diesel-Elec.	Sw.	1,200-hp.	97,969
4	Diesel-Elec.	Rd.-Sw.	1,500-hp.	145,491
30	Diesel-Elec.	"A" Frt.	1,500-hp.	166,000
4	Diesel-Elec.	"A" Pass.	2,250-hp.	235,100
5	Diesel-Elec.	Rd.-Sw.	1,600-hp.	164,704
3	Diesel-Elec.	Rd.-Sw.*	1,600-hp.	174,562
2	Diesel-Elec.	Sw.	1,200-hp.	99,256
10	Diesel-Elec.	Sw.	1,000-hp.	97,969
4	Diesel-Elec.	Rd.-Sw.	1,500-hp.	145,491
30	Diesel-Elec.	"A" Frt.	1,500-hp.	166,000
4	Diesel-Elec.	"A" Pass.	2,250-hp.	235,100
5	Diesel-Elec.	Rd.-Sw.	1,600-hp.	164,704
3	Diesel-Elec.	Rd.-Sw.*	1,600-hp.	174,562
2	Diesel-Elec.	Sw.	1,200-hp.	99,256
10	Diesel-Elec.	Sw.	1,000-hp.	99,256
4	Diesel-Elec.	Pass.	4,500-hp.	461,600
9	Diesel-Elec.	Pass.	2,250-hp.	230,800
3	Diesel-Elec.	Frt.	4,500-hp.	482,250
4	Diesel-Elec.	Frt.	1,500-hp.	166,500
20	Diesel-Elec.	Sw.	1,200-hp.	97,600
6	Diesel-Elec.	Frt.	4,500-hp.	492,644
3	Diesel-Elec.	"A" Frt.	1,500-hp.	169,633
2	Diesel-Elec.	Pass.	4,500-hp.	518,092
2	Diesel-Elec.	Transfer	3,200-hp.	333,000
1	Diesel-Elec.	Rd.-Sw.	1,200-hp.	108,825
10	Diesel-Elec.	Sw.	1,000-hp.	98,570
5	Diesel-Elec.	Sw.	1,200-hp.	98,061
5	Diesel-Elec.	Sw.	1,200-hp.	98,057
5	Diesel-Elec.	Frt.	4,500-hp.	493,112
6	Diesel-Elec.	Pass.	4,500-hp.	520,104
1	Diesel-Elec.	Frt.	4,500-hp.	485,712
1	Diesel-Elec.	Transfer	2,400-hp.	197,909
12	Diesel-Elec.	Rd.-Sw.	1,500-hp.	139,514
3	Diesel-Elec.	Sw.	800-hp.	86,000
15	Diesel-Elec.	Sw.	500-hp.	56,815
2	Diesel-Elec.	Sw.	800-hp.	86,000
2	Diesel-Elec.	Sw.	1,000-hp.	91,000
6	Diesel-Elec.	"A" Frt.	1,500-hp.	166,042
1	Diesel-Elec.	Rd.-Sw.	1,600-hp.	165,344
4	Diesel-Elec.	Sw.	1,600-hp.	138,864
5	Diesel-Elec.	Frt.	6,000-hp.	627,289
4	Diesel-Elec.	Sw.	1,500-hp.	153,251
2	Diesel-Elec.	Frt.	6,400-hp.	630,000
2	Diesel-Elec.	Rd.-Sw.	1,600-hp.	156,000
8	Diesel-Elec.	Rd.-Sw.	1,600-hp.	139,000
4	Diesel-Elec.	Rd.-Sw.	1,600-hp.	145,000
9	Diesel-Elec.	Rd.-Sw.	1,500-hp.	182,000
2	Diesel-Elec.	Rd.-Sw.	1,500-hp.	143,500
22	Diesel-Elec.	Rd.-Sw.	1,500-hp.	152,500
4	Diesel-Elec.	Rd.-Sw.	1,500-hp.	154,000
5	Diesel-Elec.	Sw.	1,200-hp.	98,000
6	Diesel-Elec.	Sw.	1,200-hp.	99,000
3	Diesel-Elec.	Sw.	600-hp.	79,956
6	Diesel-Elec.	Rd.-Sw.	1,500-hp.	136,513
23	Diesel-Elec.	Rd.-Sw.	1,500-hp.	149,500
10	Diesel-Elec.	"A" Frt.	1,500-hp.	150,000
3	Diesel-Elec.	"B" Frt.	1,500-hp.	148,000
6	Diesel-Elec.	"A" Pass.	1,500-hp.	154,000
2	Diesel-Elec.	"B" Pass.	1,500-hp	153,250
6	Diesel-Elec.	Rd.-Sw.	1,500-hp.	144,851
4	Diesel-Elec.	"B" Frt.	1,500-hp.	142,429
4	Diesel-Elec.	"A" Frt.	1,500-hp.	158,518
6	Diesel-Elec.	"B" Frt.	1,500-hp.	141,832
24	Diesel-Elec.	Sw.	1,200-hp.	99,150
2	Diesel-Elec.	Pass.	2,250-hp.	221,133
2	Diesel-Elec.	Frt.	1,500-hp.	155,755
3	Diesel-Elec.	Sw.	1,500-hp.	147,513
6	Diesel-Elec.	"A" Frt.	1,500-hp.	153,270
10	Diesel-Elec.	"B" Frt.	1,500-hp.	141,835
10	Diesel-Elec.	Sw.	1,200-hp.	100,871
2	Diesel-Elec.	Sw.	1,000-hp.	99,164
3	Diesel-Elec.	Rd.-Sw.	1,500-hp.	152,414
5	Diesel-Elec.	Rd.-Sw.	1,500-hp.	150,516
3	Diesel-Elec.	Sw.	1,200-hp.	101,008
2	Diesel-Elec.	Frt.	4,500-hp.	453,653
4	Diesel-Elec.	Pass.	2,250-hp.	230,756
4	Diesel-Elec.	Sw.	660-hp.	84,000
6	Diesel-Elec.	Sw.	660-hp.	79,000
8	Diesel-Elec.	Frt.	6,000-hp.	631,187

*With steam generator.

Freight-Train Car Prices

No. of Cars	Type	Construction	Capacity	Unit Price
125	Cov. Hopper	Steel	70-ton	$ 7,016
800	Hopper	Steel	70-ton	5,230
550	Hopper	Steel	70-ton	5,491
550	Box	Steel	50-ton	5,164
300	Box	Steel	50-ton	5,000
200	Box	Steel	50-ton	5,000
200	Box	Steel	50-ton	5,000
1,000	Box	Steel	50-ton	4,874
300	Cov. Hopper	Steel	70-ton	6,500
400	Gondola	Steel	50-ton	4,193
400	Gondola	Steel	70-ton	5,833
100	Gondola	Steel	70-ton	6,432
500	Gondola	Steel	70-ton	6,061
500	Box	Steel	50-ton	5,489
1,000	Gondola	Steel	70-ton	5,650
500	Gondola	Steel	70-ton	5,250
100	Caboose	Steel	.....	17,210
100	Caboose	Steel	.....	11,975
1,500	Gondola	Steel	70-ton	5,477
1,000	Box	Steel	50-ton	4,885
500	Box	Steel	50-ton	4,992
1,000	Hopper	Steel	50-ton	4,361
95	Cov. Hopper	Steel	70-ton	6,250
100	Flat	Steel	50-ton	5,000
300	Cov. Hopper	Steel	70-ton	6,901
200	Cov. Hopper	Steel	70-ton	6,583
598	Flat	Steel	70-ton	5,291

Passenger-Train Car Prices

No. Bought	Type	Construction	Price
3	Rail Diesel Coach	Stainless Steel	$129,400
30	Gallery-type Suburban	Stainless Steel	159,300
3	48-Passenger Coach	Steel	125,000
8	4 Bed.-16 Duplex Roomette	Steel	163,000
15	2 Compt.-5 Bed.-6 Roomette	Steel	153,500
1	1 Drawing Room-2 Bed.-Obs.	Steel	165,500
6	Baggage-Mail	Steel	73,587
6	Baggage-Dormitory	Steel	96,958
5	60-Passenger Coach	Steel	111,302
6	Coffee Shop-Lnge.	Steel	139,270
6	Dining	Steel	142,417
6	Observation-Lnge.	Steel	145,525
1	60-Passenger Coach with radio	Steel	113,423
38	M. U. Coach	.....	104,100
18	Coach	.....	121,100
18	6 Bed.-10 Roomette	.....	146,250
1	Parlor	.....	136,000
2	5 Double Bed.-Buffet-Obs. Lnge.	.....	150,120
35	52-Passenger Coach	Steel	121,100
2	54-Passenger Coach	Steel	110,000
15	6 Bed.-10 Roomette	.....	146,250
3	11 Double Bedrooms	.....	148,500
2	Parlor	.....	136,000
1	Coach-Baggage	.....	117,000
19	10 Bed.-6 Double Bed	Steel-Aluminum	140,000
22	10 Bed.-6 Double Bed	H. T. Steel	145,292
24	10 Bed.-6 Double Bed	Stainless Steel	143,147
5	10 Bed.-6 Double Bed	Stainless Steel	145,534
5	Coffee Shop-Lnge.	Stainless Steel	153,640
6	Lounge	Stainless Steel	141,104
3	Dining	Stainless Steel	147,479
5	Baggage-Dormitory	Stainless Steel	122,550
8	Chair	Stainless Steel	121,868

In November of 1950 the Canadian National opened this new freight shed at Edmonton, Alberta. The station contains 62,000 sq. ft. of floor space and its six tracks provide for 108 car spots; 43 truck unloading spaces are available

Canadian Railroads Making Adjustments

Further rate increases sought, as those authorized in 1950 have not matched increases in costs

By OUR CORRESPONDENT AT OTTAWA

Canadian freight rates and wages have taken on the characteristics of a whirligig, which was given another spin just before Christmas when Justice R. L. Kellock of the Supreme Court of Canada reported his findings on the latest dispute. While some citizens of the Dominion were quick to appraise his report as favorable for the railways, President Donald Gordon of the Canadian National and President W. A. Mather of the Canadian Pacific promptly gave notice in public statements that the railways would be obliged to seek larger revenues. Application already has been filed for authority to raise rates by 5 per cent (10 cents a ton on coal and coke), including an increase in the minimum charge for single l.c.l. shipments.

Much of the trouble which culminated in the nine-day strike, commencing on the morning of August 22, which completely tied up the various operations of the two principal Canadian systems, began with the 21 per cent freight rate increase awarded to the railways in March, 1948. This award increased the revolutions of the spiral, for the unions proceeded to make a fight for higher wages in the light of the added revenue to accrue to the railways, and in July that year the employees were given an across the board increase of 17 cents an hour, retroactive to March 1. Another small freight rate boost was allowed by the Board of Transport Commissioners and again in mid-June of 1949 the unions served notice on the railways that they wanted new negotiations. Three weeks later the railways stated they were ready to negotiate, but no agreement resulted from the talks. Two conciliation boards were named by the federal Labor Department. The findings of these boards were accepted by the railways but not by the brotherhoods, and then came, four months later, in August, 1950, the nine-day strike.

The resulting paralysis of rail service across the country brought an emergency session of Parliament, called for the primary purpose of restoring Canada's rail services. The Parliament enacted legislation requiring the men to return to work pending arbitration, and it was ordered that the findings of the arbitrator would be binding on both the railways and the employees. Parliament also voted an interim wage increase of 4 cents an hour. Just before Christmas Justice Kellock, the arbitrator, made his report, the principal features being an award of the employees' original demand of an increase of 7 cents an hour, and a provision that the 5-day 40-hour week should be effective June 1, 1951.

Justice Kellock in his findings showed that the non-operating employees of the Canadian National totaled 85,484 and of the Canadian Pacific 62,979, or an aggregate of 148,463. There are also 6,286 hotel employees and 2,977 water transport workers. Unions representing the 31,461 operating employees have also served notices

for wage increases of various amounts, but Justice Kellock said negotiations on these were now in progress, so that all of the approximately 189,000 employees of the two railways are directly or indirectly affected.

It was explained by the arbitrator that from the railway standpoint the reduction in the basic week from 48 hours to 40, quite apart from the 4-cent increase granted by Parliament, would result in payment of 20.38 cents per hour more for each hour of labor performed in the new work week, but this increase would not cost the railways any more money except to the extent that necessary labor, formerly done in the 48-hour week, remained undone at the end of the new 40-hour week. Justice Kellock added that, exclusive of hotel and water transport workers, the railways estimated the annual cost of the 40-hour week at nearly $81,000,000 on the basis of an increase to the full extent of the 20 per cent.

U. S. Experience Referred to

The brotherhoods argued before the arbitrator that there had been a substantial drop in the number of employees on the U. S. roads in first seven months of operation in 1949-50 on the basis of the 40-hour week instead of 48 hours, and that the earnings of the U. S. roads had gone up while operating costs had gone down. Canadian railways, however, contended it was too soon to draw any conclusion from the U. S. experience owing to strikes there in 1949, the curtailment of railway services wherever possible, postponement of inevitable maintenance work and drastic cuts in staffs. The railways argued, too, that increased mechanization required increased capital outlay.

Another important point stressed by Justice Kellock was that it was apparent at the time of the service of the unions' notice to negotiate, on June 16, 1949, that the railways were still in the position of having been afforded no source of revenue to take care of the wage increases already granted a year before. He reported, too, that the brotherhoods had declared that, if they were to be denied wage increases because the railways could not get necessary revenue, the employees were in an "economic trap." Answering this the arbitrator reminded the unions that the railways were subject to regulative jurisdiction, as well as to the competition of highway, water and air transport.

During 1950 the Canadian railways pushed their revenue freight traffic up close to the high level of the war period. Revenue carloadings for 1950 were about 4,000,000, slightly under the total for the previous year, and there was a sizable increase over 1949 in cars received from connections. This is an indication that the business lost to the railways in the nine-day strike of last August was more than recovered, but all of this achievement was offset by higher operating costs, chiefly wages.

Another feature of the year in Canada was the stir in federal government quarters over the tangled question of highway competition and how to regulate it to the extent of getting operating conditions of trucks closer to a competitive basis with the railways. Late in the fall the Supreme Court of New Brunswick ruled that that province had jurisdiction over truck operation across its borders into other provinces. This was promptly challenged by the federal government which gave notice it would appeal the ruling to the Supreme Court of Canada. But an interesting aspect of this situation is that while the federal government questions the right of any province to exercise extraprovincial authority the federal authorities are not yet ready to assert or exercise federal jurisdiction.

Back of this hesitancy on the part of the federal government to regulate truck operations are the repeated failures to get anything approaching unanimity or concerted action from the provinces to curb uneconomic truck operations. Not long before the last war the Dominion government introduced legislation one of the aims of which was to set up a regulatory authority over highway competition, but because of the refusal of some provinces to cooperate the legislation lapsed into futility.

The Canadian Pacific opened this new ticket office at 581 Fifth avenue, New York, in 1950

There are members of the federal government who hold strong views on the necessity of regulating truck competition with the railways, and a good guess is that, during argument on appeal to the Supreme Court of Canada and later, these members will make a determined attempt to enlist the cooperation of the provinces to bring it about.

Subsidy Extension Opposed

The federal government has publicly declared repeatedly that it is opposed to any extension of the subsidy system to enable the railways to make a reasonable profit after meeting fixed charges as well as mounting operating costs. The majority is opposed to the policy advocated in Socialist quarters that if the roads cannot operate efficiently on existing freight rates they should both be taken over by the public and have the taxpayers make up the deficits. This procedure has been steadily advocated by the Socialist members in the House of Commons, and even though their representation has all but disappeared from the federal Parliament there is still a Socialist government in Saskatchewan, and there are, also, Liberal supporters of the federal government in the West who declare that freight rates must be kept down at whatever cost to the railways. But this view of Western Liberals has not influenced the attitude of the government at Ottawa.

Another factor that has made the railway situation difficult is the steady battle of seven provincial governments against higher freight rates. All through this battle

the two central provinces—Quebec and Ontario—which are the wealthiest and provide most of the rail business, have stayed on the fence. Recently the opposing provinces received a setback when their appeal against the 20 per cent freight rate increases of the last 14 months was turned down by the federal cabinet.

In Western political quarters, as well as in Eastern railway and shipping circles, keen interest is shown in the forthcoming report of the royal commission, headed by W. F. A. Turgeon, which was set up in 1948 by the late Prime Minister Mackenzie King to make a broad study of the nation's economic conditions and problems as they are related to the question of adequate transportation services—rail, water, highway and air.

C. N. Position Improved

The Canadian National's situation improved in 1950, Mr. Gordon has pointed out. Heavier freight traffic, together with the freight rate increases granted the railways in March and June, substantially improved gross revenues for the year. It is estimated they will exceed $550 million; this is expected to be the break-even point for 1950, whereas the Canadian National wound up 1949 with a $42-million deficit. Mr. Gordon went on to say, however, that "large and immediate expenditures are confronting us for equipment and maintenance as well as substantial increases in the cost of labor and materials, so that it would be misleading to assume that the 1950 results are typical or that the need for some relief from the burden of excessive fixed charges has become less acute.

"Revenue tons of freight moved by the C.N.R. in 1950 totaled approximately 80 million, or 4 per cent more than in 1949. Lower loadings are indicated in pulpwood, livestock, grain and grain products. The heavy decrease in grain tonnage was due principally to the earlier movement of a portion of the 1949 crop during the latter part of that year and the dollar shortage in Great Britain, which caused deferment of deliveries of some of the wheat covered by the 1949-50 contract. There were increased loadings in coal, forest products, woodpulp, paper and mine products. Substantially higher loadings of crude oil and fuel oil reflected the importance of new oil fields under development in Western Canada. . . .

"As compared with 1949, Canadian National passenger earnings in 1950 will show a decrease of approximately 10 per cent. This is attributable not only to the leveling off of passenger traffic, but to the curtailment of service for two months at the beginning of the year owing to a fuel shortage, to the work stoppage in August and to the Manitoba flood. While it was of substantial proportions, tourist and convention traffic declined and immigration from Europe fell off. . . .

"Indications of our endeavor to keep pace with the development of Canadian industry and materially assist in advancing it," Mr. Gordon continued, "may be seen in the construction of new freight-handling facilities in Montreal, the extension and improvement of the freight yards at Mimico, Ont., the enlargement of the Vancouver freight yard, the building of a new freight shed with additional trackage at Edmonton, the extension to the Macdonald Hotel in that city, the building of an annex to the motive power shop at Stratford and of a new wheel shop at Point St. Charles. . . .

"During the year, we experienced shortages of all types of freight cars, particularly in the latter months, owing to the increase in car loadings and the backlog of traffic accumulated during the work stoppage. An accelerated shopping and repair program has returned a substantial number of 'bad order' cars to service and 5,000 steel box cars are now on order for 1951 delivery. We added 688 units of freight car equipment. We are still badly short of various types of rolling stock both freight and passenger, and a careful survey has just been completed to establish what is needed.

The Canadian Pacific achieved "something less than satisfactory financial results from its railway operations" in 1950, Mr. Mather observed in his year-end statement. "Freight rate increases, effective in April and June, resulted in increased earnings for the remaining months of the year on a somewhat reduced volume of revenue freight.

"These increases, coupled with substantial savings in transportation costs brought about by improved efficiency and equipment, made possible increased gross and net revenues for the year. The ratio of net to gross earnings for the year, however, again reflects, as it has consistently in recent years, the effect of inflationary tendencies in the steadily rising burden of cost for labor and materials.

"It must be apparent that the relative monopoly which the railways had in the transportation field thirty years ago does not now exist. Due to the growth of Canada, the expansion of industry, and changing conditions, new forms of transportation have been developed which, in some cases, are preferred to railway services. That is as it should be. It is in the best interests of the country that there should be competition in the transportation field as in other industries but only so far as such competition is on a fair and equitable basis. No form of transportation should hold a preferred position, or continue to enjoy it at the expense of the taxpayer, or to the detriment of the carriers by rail which, after all, have proven to be and are still essential to the development of the country.

Labor Peace is Vital

Commenting on the arbitrator's award in the wage case, which is effective until September 1952, Mr. Mather said: "It is difficult to predict the effect on future labor negotiations of the results of the methods followed to dispose of this dispute. Nothing is more important to Canada today, in the light of the present international situation, than industrial harmony. It is my view that much progress towards that goal can be accomplished if union membership, particularly those connected with public service corporations, were to be afforded the same freedom of expression that is given Canadian citizens in the exercise of their electoral franchise. Given that opportunity and a ballot in regard to which the issue is stated in an unbiased manner, it should be possible to settle disputes as to wages and working conditions by the ordinary process of negotiation with resort only to compulsory arbitration in the event that matters reach the stage where they threaten to harm the public interest.

"Notwithstanding the uncertain financial outlook, already mentioned, the Canadian Pacific expended considerable capital funds during 1950 in purchasing new equipment and improving the capacity of its various rail facilities for service to the nation. Large sums continue to be spent upon a multitude of improvements which enable the company's services to match the growth of Canada's industrial output."

Mr. Mather predicted that, barring a further major deterioration in world affairs, 1951 should be a year of high level in industrial activity and development. "Oil, minerals, manufacturing and irrigation all present great potentiality towards the increased economic growth and strength of the country," he said. "If Canadians are imbued with a will to work, nothing short of a national catastrophe will prevent the attainment of that degree of progress which we all desire."

Photo courtesy of Business Week

President Aleman of Mexico uses a blow torch to open the railroad link between Yucatan and the rest of Mexico

By J. M. OROZCO ESCOBOSA
Our Mexican Correspondent

MEXICAN RAILWAYS Enjoyed Record Gross in 1950

Higher traffic and increased rates yield top gross and cut losses—Yucatan link completed—Dieselization proceeds apace—Operating efficiency in most indices improved

The first eight months of 1950 brought the highest earnings in the history of the National Railways of Mexico. Gross income increased 9.07 per cent, compared to the same period of 1949, which served further to reduce the net operating loss to 953,871 pesos, compared with 10,161,623 in 1949*. This improvement was due mostly to substantial increases in freight, passenger and express traffic, and partly to a boost in freight rates—ranging from 10 to 25 per cent according to commodity—which went into effect July 15.

The outstanding railroad event in Mexico during 1950 was the opening of the Southeast railroad from Coatzacoalcos to Campeche, along the Gulf Coast to Mexico. This 650-kilometer road is the first to link the hitherto isolated Yucatan State system with the National of Mexico network. The Yucatan lines—the sole remaining narrow-gage road of importance in the republic—are now in process of widening to standard gage. Another important physical change was initiated recently when earth excavation work was begun on the site of a new freight terminal in the outskirts of Mexico City. During 1950 also a new station was built at Chihuahua.

A ten per cent increase in salaries was granted all National Railways personnel on August 1, 1950, the cost of which amounts to about 36 million pesos a year. Investments in additions and betterments amounted to 7,981,033 pesos in roadway and to 3,175,529 pesos in equipment.

Under President Miguel Aleman's plan for improving the railroads in Mexico, a heavy program of investment in new diesel-electric motive power was made. Sixty-eight Pullman cars and six dining cars were acquired and will be operated under contract on lines not previously Pullman-served.

Important personnel changes in 1950 were as follows: Luis Madrazo Basauri was appointed assistant general manager in charge of administrative affairs, succeeding Lopez Amador, resigned; Dr. Cid Fierro was appointed chief surgeon, succeeding Dr. Mario Madrazo Basauri, who has retired on pension; and Lorenzo Valadez was appointed general superintendent of motive power and machinery, succeeding Isaac Perez, retired.

Traffic Trends During 1950

Passenger traffic increased, as shown by the rise in revenues. Freight traffic increased by 340,897,000 net ton-kilometers, or 5.9 per cent, in the first eight months of 1950, compared with the same period of 1949. This,

* The peso today is exchanged in the U. S. at 11.7 cents

together with the increase in freight rates, produced an increase in freight revenue of 20,371,914 pesos. With a slight increase of 35,883 freight-train kilometers, equivalent to 0.3 per cent, the railroads handled an increase in train-load of 445,590,000 gross ton-kilometers, or 3.5 per cent, in the first eight months of 1950, compared with 1949. The proportionately greater increase in net ton-kilometers handled (5.9 per cent) over the increase in loaded freight-car kilometers (1.7 per cent) had a favorable bearing on the net tons loaded per car, which increased from 31.1 to 32.4, or 4.2 per cent.

With the exception of freight-train speed, which dropped from 19.6 to 18.9 kilometers per hour, or 3.6 per cent—partly attributed to heavier freight train-loads, which increased from 890 to 924 gross tons per train-kilometer, or 3.8 per cent—and gross ton-kilometers per train-hour, which fell slightly (0.2 per cent) as a consequence, all the other averages shown in the table of selected operating statistics herewith reflect an improved train performance in the first eight months of 1950, compared with the same period of the previous year.

Total imports from the United States, in carloads, showed a slight decrease— 20,174 cars in the first seven months of 1950, compared with 20,825 cars in 1949. Decreases occurred at all gateways except Laredo, Tex., which increased from 11,627 to 11,842 carloads. The lowered rate of imports is due, in large measure, to the adverse rate of exchange for the peso and certain trade restrictions. However, the former factor had a favorable influence on exports, the total number of carloads of which increased from 14,966 in 1949 to 16,763 in 1950, as a result of increases in all the gateways, with the exception of El Paso, Tex., which showed a slight decrease from 3,591 to 3,336 carloads.

The total volume of freight transported by the National Railways of Mexico increased from 8,538,475 carloads during the first seven months of 1949 to 8,867,488 in the same period of 1950. Increases occurred in all commodity groups, with the exception of animals and animal products, which showed a decrease from 151,311 to 112,776 carloads.

Earnings at Peak

Gross earnings from railway operations amounted to 378,084,567 pesos during the first eight months of 1950, compared with 346,647,579 pesos during the same period of 1949—an increase of 9.07 per cent, as noted above. Freight revenues increased from 260,387,187 pesos to 280,759,101 pesos, or 7.82 per cent; passenger earnings increased from 44,478,940 pesos to 50,640,305 pesos, or 13.85 per cent; express revenues increased from 24,845,010 pesos to 28,574,758 pesos, or 15.01 per cent; miscellaneous earnings increased from 12,507,287 pesos to 12,546,867 pesos, or 0.32 per cent, while baggage revenues decreased from 140,784 pesos to 110,424 pesos, or 21.57 per cent, and telegraph earnings decreased from 36,095 pesos to 33,650 pesos, or 6.78 per cent. Total operating income increased from 342,395,303 pesos to 372,665,105 pesos, or 8.84 per cent, and non-operating income increased from 4,252,276 pesos to 5,419,462 pesos, or 27.45 per cent.

Total railway expenses increased from 356,808,902 pesos during the first eight months of 1949, to 379,038,438 pesos in 1950, or 6.23 per cent. Maintenance-of-way department expenses decreased from 63,092,526 pesos to 62,612,441 pesos, or 0.76 per cent, during these periods; maintenance-of-equipment expenses increased from 94,146,906 pesos to 107,215,746 pesos, or 13.88 per cent; traffic department expenses increased from 2,368,541 pesos to 2,568,176 pesos, or 8.43 per cent; transportation department expenses rose from 132,198,668 pesos to 139,120,597 pesos, or 5.24 per cent; express department expenses increased from 17,101,989 pesos to 18,077,027 pesos, or 5.70 per cent; miscellaneous expenses increased from 781,176 pesos to 878,144 pesos, or 12.41 per cent; general expenses were boosted from 21,113,955 pesos to 23,745,142 pesos, or 12.46 per cent; and total operating expenses increased from 330,803,762 pesos to 354,217,273 pesos, or 7.08 per cent. "Other-than-operating" expenses decreased from 26,005,140 pesos to 24,821,165 pesos, or 4.55 per cent—which reflects a slight reduction in per diem car rental payments. The table of selected statistics shows a decrease of 1,419 cars on line daily, a number of which were rented cars.

Since the increase in railway revenues of 9.07 per cent was proportionately higher than the increase in expenses of 6.23 per cent, the net operating loss was reduced from 10,161,323 pesos in the first eight months of 1949 to 953,871 pesos in the same period of 1950 as noted.

Repair costs in labor and material per 1,000 kilometers run by passenger cars increased from 122.83 pesos to 124.12 pesos, or 1.1 per cent, and for freight cars from 130.37 pesos to 170.77 pesos, or 31.0 per cent—chiefly because of continued increases in the price of materials. The cost of back-shop repairs to locomotives per 1,000 kilometers run increased from 931.29 pesos to 1,157.96 pesos or 24.3 per cent, and maintenance repairs showed an increase from 683.89 pesos to 778.93 pesos, or 13.9 per cent, due to increases in both wages and prices of materials.

Selected Operating Statistics (First 8 Months 1950-1949)

	1950	1949	Inc. or Dec.	Per cent change
Locomotive-klms.	31,060,651	30,520,142	+540,509	+1.8
Freight train-klms.	12,649,133	12,613,250	+35,883	+0.3
Pass. train-klms.	7,900,807	7,725,478	+175,329	+2.3
Mixed & special train-klms.	3,319,640	3,233,157	+86,383	+2.7
Non-revenue train-klms.	303,255	158,477	+144,778	+91.4
Total train-klms.	24,172,835	23,730,362	+424,473	+1.9
Pass. train-klms.	69,284,679	66,506,941	+2,777,738	+4.2
Frt. loaded car-klms.	190,512,183	187,356,376	+3,155,807	+1.7
Frt. empty car-klms.	93,028,478	92,831,393	+197,085	+0.2
Total frt. car-klms.	283,540,661	280,187,769	+3,352,892	+1.2
Net ton-klms. (1,000's)	6,166,831	5,825,934	+340,897	+5.9
Gross ton-klms. (1,000's)	13,038,448	12,592,858	—445,590	—3.5
Total number cars loaded	340,801	339,414	+1,387	+0.4
Net tons per train-klm.	462	435	+27	+6.2
Gross tons per train-klm.	924	890	+34	+3.8
Speed per hr. (klms.) frt.	18.9	19.6	—0.7	—3.6
Gross ton-klms. per train-hr.	17,446	17,474	—28	—0.2
Frt. locomotive-klms. daily	175	175	.....	....
Liters oil per 1,000 g.t. klm. frt.	51.0	51.5	—0.5	—1.0
Per cent loaded car-klms. to total	67.2	66.9	+0.3	+0.4
Car-klms. per car daily	49.3	46.0	+3.3	+7.2
Net tons per car	32.4	31.1	+1.3	+4.2
Cars on line daily	23,656	25,075	—1,419	—5.7
Klms. line operated	13,299	13,301	—2	....

Loaded Cars Interchanged With U. S. Roads—1st 7 Mo. 1950

	Imports		Exports	
	1950	1949	1950	1949
Laredo	11,842	11,627	7,116	5,943
El Paso	2,919	2,982	3,336	3,591
Eagle Pass	2,827	3,542	1,499	952
Brownsville	2,586	2,674	4,822	4,480
Totals	20,174	20,825	16,763	14,966

Trend of Traffic—1st 7 Mo. 1950

Commodity	1950, tons	1949, tons
Forest products	367,773	348,490
Agricultural products	2,486,149	2,329,467
Animals and animal products	112,776	151,311
Inorganic products	4,875,156	4,807,839
General merchandise	1,025,634	901,368
Totals	8,867,488	8,538,475

Construction Work Still BIG BUSINESS

More than 9,000 projects under way in 1950 at a minimum cost, when completed, of $560,000,000

By H. E. MICHAEL
Associate Editor

One of the largest railway improvement projects completed during the year was the new Canadian Pacific freight terminal at Montreal, Que., including a hump-retarder yard

Work went forward in 1950 on the 71-mile Centennial cutoff on the Burlington's line between Chicago and Kansas City. This view shows blasting operations under way in a large rock cut, which will have a maximum depth of 95 ft.

THE OUTLOOK

The prospects are good for a relatively high rate of railroad construction in 1951, although the degree of activity will depend to some extent on the availability of materials. Substantial factors in the 1951 construction picture are authorizations totaling more than $220,000,000 of incompleted work now in progress. Capital expenditures in this category are expected to be 27 per cent higher in the first quarter than in the comparable period of 1950.

Unusual activity is noted in the construction of new lines. More than 83 miles of such lines are now under construction in the United States and 125 miles in Canada, with an additional 317 miles in Canada now under survey.

The volume of additions and betterments to the fixed properties of the railroads in the United States and Canada, elastic as always, bounced high in the last half of 1950 from the low-traffic doldrums of the first six months, to produce an annual total no more than 10 per cent less than in 1949, if that much. As the year closed, that percentage was becoming smaller day by day, with activity increasing in almost every section of the country. From all reports and "straws in the wind," this increased activity presages a high volume of work in 1951. Specifically, a total of 9,000 railroad improvement projects were in progress during the year, which will cost a total of at least $560,000,000.

Because railroad business was then relatively poor, engineering officers were scanning their construction programs last June for items that could be eliminated or reduced with the least disruption to progress in improving the overall efficiency of their roads. Few new projects were being started or contracts let, and the outlook was dull. The Korean "incident," bringing with it a substantial increase in the volume of traffic, changed all that. By mid-August many projects earmarked for curtailment, if not elimination, were in full swing, and new items of work were being projected.

Traffic Capacity Increased

How far the pendulum swung on the upturn can be gathered from the reports from engineering officers to *Railway Age* indicating that 6,907 construction projects were under way during 1950, which, when completed, will have cost a total of $434,121,738. In addition, about 2,000 other projects were reported under way at an estimated cost of $125,000,000, although specific information regarding the cost of these projects was not obtained. How reluctant railway officers were to undertake new items of work during the quiet part of the year can be surmised when it is noticed that, of the 6,907 projects reported under construction, 5,175 were com-

One of the largest railway building construction jobs to be completed in 1950 was the Central Union terminal at Toledo, Ohio, which was a project of the New York Central

pleted in 1950. This is an abnormally high percentage of completions even though it leaves a carryover of more than $220,000,000 worth of work for 1951.

For several years a large percentage of all additions and betterments to the railways have been designed either to make it possible to use the full capacity of new equipment, such as diesel-electric locomotives, being purchased every year in large numbers, or to effect other significant economies in operation. In 1950, more attention was paid to adding to the railroads' traffic capacity than to any other category of work. This is evidenced by reports that 298 yard-and-terminal improvement projects were under way during the year, which, when completed, will have cost about $70,000,000. Of these, 213 were completed at a cost of about $22,000,000. This leaves 85 projects, some of which are large, and which will cost $48,000,000, to be carried over into 1951. This class of construction work constituted the largest single category of capital improvements in progress in 1950, returning to the first-place ranking it held in 1948, from which it dropped to second place in 1949.

While yard-and-terminal improvement projects climbed to first place in the 1950 expenditures, projects involving revisions of grade and alinement dropped from first place in 1949 to second this past year, reversing the situation that prevailed a year ago. A total of 51 realinement projects were under way last year, which are estimated to cost about $57,000,000. Thirty of these projects were completed at a cost of $28,702,511.

Such facts as these are shown in one of the tables, which gives a comprehensive analysis of each of the major categories of construction work reported in progress during the year. It also shows, for instance, that at least 1,121 bridge projects, costing $23,551,988, were completed during 1950 out of 1,532 projects under way, which will cost $54,410,331 when finished. All figures given in this table represent the construction activities of 142 railroads that furnished details of their expenditures. Because four Class I roads were unable to break their expenditures down into categories, the figures shown in the table, as large as they are, must be considered as minimum, and the totals for the country as a whole adjusted to the estimated volumes given at the beginning of this article. Since only one small road in Mexico supplied details of its construction activities, its statistics were withheld as not accurately representing that country's improvement programs.

A total of 109 miles of new lines was constructed in the United States in 1950. This mileage may seem small, but it has been exceeded only three times since 1932—in 1937, 1944 and 1947. Although no large lines were completed in 1950, some of the trackage built was part of longer lines under construction. Besides the first track built, 15 miles of second track and 9 miles of third track were finished. Much of the new trackage constructed in this country was incident to relocation work of one kind or another and does not represent a net increase in the railroad mileage of the country.

In Canada a total of 9 miles of new lines was built, comparing with 39 miles in 1949 and 40 miles in 1948. However, there is a total of 125 miles of new lines under construction in Canada and 317 miles are under survey or are projected. The mileage of new lines constructed in Mexico is not available. No multiple-track work was completed in either Canada or Mexico.

The largest single construction project under way in the United States during 1950 was the Centennial cut-off of the Burlington to shorten its route between Chicago and Kansas City. This work, expected to be completed in 1951, will cost about $16,330,000. The largest project completed in 1950 was the double-track Elkhorn

CLASSIFICATION OF CONSTRUCTION WORK IN 1950

Construction Category	Minimum Number of Projects: Under Way During Year	Minimum Number of Projects: Completed During Year	Total Cost: Completed Projects	Total Cost: All Projects
New lines, additional tracks	85	71	$21,896,259	$28,876,808
Revisions of grade and alinement	51	30	28,702,511	56,501,082
Yards and terminals	298	213	21,844,499	69,840,159
Bridge work	1,532	1,121	23,551,988	54,410,331
Signaling, C.T.C., etc.	946	640	19,498,239	45,145,104
Buildings				
Passenger stations	116	72	4,996,976	7,928,550
Freighthouses	107	77	1,840,961	10,125,114
Car shops	67	52	1,027,284	1,290,764
Other buildings	382	273	14,478,145	25,211,393
Locomotive servicing facilities				
Diesel	325	216	12,269,489	21,325,172
Steam	76	52	2,910,425	5,397,788
Industrial tracks	1,159	1,013	11,970,442	17,566,977
Tunnels (excluding work shown in other categories)	24	11	6,381,068	7,445,182
Grade separations	137	84	18,485,966	44,113,789
Miscellaneous construction	1,602	1,250	26,321,713	38,942,125
Totals	6,907	5,175	216,175,965	434,121,738

MILES OF MAIN TRACK BUILT IN THE UNITED STATES IN 1950

States	No. of companies building	First track	Second track	Third track	Fourth track	Total
California	1	12.68	....	....	....	12.68
Colorado	1	4.31	....	....	....	4.31
Illinois	1	11.20	....	....	....	11.20
Kansas	1	0.57	....	....	....	0.57
Kentucky	3	2.37	6.64	8.60	....	17.61
Mississippi	1	11.66	....	....	....	11.66
Missouri	1	6.40	....	....	....	6.40
Nebraska	1	19.74	....	....	....	19.74
New York	1	1.50	....	....	....	1.50
North Carolina	1	0.80	....	....	....	0.80
Ohio	2	6.23	0.24	....	....	6.47
Oregon	1	1.00	....	....	....	1.00
Pennsylvania	1	0.24	1.05	....	....	1.29
South Carolina	1	1.77	....	....	....	1.77
Texas	1	2.07	2.07	....	....	4.14
West Virginia	2	13.85	5.28	....	....	19.13
Wyoming	1	12.93	....	....	....	12.93
Total		109.32	15.28	8.60	....	133.20

Brought to practical completion during the year was a large grade separation project at El Paso, Tex., involving primarily the tracks of the Southern Pacific. Three tracks were depressed through the central district of the city

tunnel and incidental facilities built by the Norfolk & Western at a total cost of $11,912,000.

In Canada the largest construction project under way involved the expenditure of $10,000,000 by the Canadian Pacific for the construction of its St. Luc yard.

Following is a detailed report by roads of all construction projects, either completed during the year, or still in progress at its close, the individual cost of which approached or exceeded $1,000,000, as well as all new lines and multiple tracks constructed, under construction or under survey, regardless of cost:

Railway Construction in the United States

(Figures in parentheses indicate percentage of completion at the end of 1950.)

Akron Union Passenger Depot

Important Work Undertaken: Construction of new passenger station including shelters, platforms, etc. Akron, Ohio, $1,500,000 (100).

Alaska

Important Work Undertaken: Construction of terminal facilities, including warehouse, shops, and utilities, Fairbanks, $3,305,000 (100); construction of power and heating plant, Fairbanks, $1,155,000 (100); Turnagain Arm revision of grade and alinement on railway and highway, Indian to Potter, $5,436,000 (75); widening bank and raising grade, Potter to Clear, $4,900,412 (12); relaying rail, Caswell to Fairbanks, $2,297,295 (95).

Atchison, Topeka & Santa Fe

Important Work Undertaken: Construction of hump yard, Pueblo, Colo. (100).
(Gulf, Colorado & Santa Fe) *Important Work Undertaken*: Revision of grade and alinement for construction of Whitney dam, Kopperl, Tex. (10).

Atlantic Coast Line

First Track: Four Holes, S. C., to Giant, 1.77 miles, Fairmont branch, Elrod, N. C., 0.80 mile.

Baltimore & Ohio

Second Track: In the vicinity of Dayton, Ohio, 0.24 mile.
Important Work Undertaken: Revision of grade and alinement, Tunnel No. 1, Clarksburg, W. Va., $3,750,000 (15); construction of import-ore pier, Curtis Bay, Baltimore, Md., $3,500,000 (75).

Chesapeake & Ohio

(Chesapeake District) *Second Track*: At Bobbs, Ky., 3.10 miles
Third Track: Riverton, Ky., to Limeville, 8.60 miles.
Important Work Undertaken: Construction of a low-level coal pier, including incidental track facilities, Newport News, Va., $8,785,500 (99.9); replacing steel-pin spans in viaduct from 14th street to Tredegar street, and the replacing of steel spans in three bridges, Richmond, Va., $3,461,000 (68); construction of an additional freight main track and additional yard track, Huntington, W. Va., $1,721,700 (99); reconstruction of approaches to bridge, Kenova, W. Va., $1,917,700 (40); construction of an extension to Dawkins subdivision, Carver, Ky., $4,527,500 (100); yard and engine-terminal improvements, Shelby, Ky., $3,272,700 (97); construction of Y.M.C.A. building, Russell, Ky., $1,164,800 (100); enlarging westbound classification and receiving yard, Russell, Ky., $5,070,000 (100); construction of third track, Riverton, Ky., to Limeville, inculding installation of C.T.C., extension of a bridge, addition to an interlocking tower and a 160-car set-off track, $1,777,420 (100); construction of additional yard tracks, Parsons, Ohio, $1,078,000 (99); installation of remote-controlled power switches and signals at passing tracks, including track changes, Columbus, Ohio, to Cummings, $1,958,515 (100); installation of C.T.C., including the extension of passing tracks, Cheviot, Ohio, to Drew, Ind., $2,101,690 (2); revision of alinement, including the construction of a new tunnel, Fort Spring, W. Va., $2,413,276 (100); revision of alinement, Claypool, W. Va., to Meadow Bridge, $1,183,000 (100); construction of extension to Laurel Fork subdivision, Clothier, W. Va., $1,227,250 (100); installation of car retarders, etc., Walbridge, Ohio, $1,918,120 (100); construction of extension to Track Fork subdivision, Holden, W. Va., $3,148,100 (100); extension to E.&B.V. subdivision, Wayland, Ky., $6,564,700 (100).

Chicago & North Western

New Road Under Survey: Partridge, Mich., to Negaunee, 3.30 miles.
Important Work Undertaken: Installation of C.T.C. including necessary track work, West Chicago, Ill., to Nelson, $1,590,265 (100).

Chicago, Burlington & Quincy

First Track: Siddons, Wyo., to Boysen, 12.93 miles, in connection with relocation which shortened line 0.14 mile; Bloomington, Neb., to Orleans, 19.74 miles, in connection with relocation which shortened line 0.34 mile; Centennial Cutoff, Needles, Mo., to Forker Junction, 6.40 miles.
Important Work Undertaken: Construction of new freighthouse, Chicago, $2,710,404 (100); construction of Centennial Cutoff, Needles, Mo., to Missouri City Jct., involving the construction of 6.40 miles of new line and the reconstruction and rehabilitation of 21.84 miles of main track, $16,330,154 (48); installation of C.T.C. including incidental track changes, Ravenna, Neb., to Alliance, $1,841,172 (80); revision of yard, Daytons Bluff, Minn., $920,225 (100); revision of Murray yard, North Kansas City, Mo., $1,597,584 (100); relocation of main track, Harlan County, Neb., $938,808 (100); relocation of main track, Bloomington, Neb., to Orleans, $1,259,774 (100).
(Kansas City & Brookfield) *New Road Under Construction*: A part of the Centennial Cutoff, Tina Junction, Mo., to Missouri City, 42.58 miles.

Chicago, Rock Island & Pacific

First Track: At Denver, Colo., 4.31 miles.
Important Work Undertaken: Construction of new hump yard, Silvis, Ill., $3,500,000 (95); construction of new line to extend from Union Pacific track to Denver & Rio Grande Western's new yard, Denver, Colo., $1,332,168 (95).

Delaware, Lackawanna & Western

Important Work Undertaken: Construction of two undergrade crossings, one overhead crossing, two pedestrian subways and drainage structures along 4½ miles of railroad in connection with the elimination of crossings at various streets in Corning, N. Y., $1,000,000 (50).

Elgin, Joliet & Eastern

Important Work Undertaken: Classification and hump yard, Kirk yard, Gary, Ind., $4,413,302 (10).

Erie

Important Work Undertaken: Elimination of highway crossings, including the relocation of 6.89 miles of line, construction of 13 single-span and seven multiple-span railroad bridges, two multiple-span highway overhead crossings, altering an existing highway bridge, building three pedestrian subways and 29 drainage structures. Construction of a passenger station and plaza, freighthouse and driveways, streets and incidental municipal items, and the installation of diesel-terminal facilities, all at Corning, N. Y. (25).

Houston Belt & Terminal

First Track: Houston, Tex., 2.07 miles.
Second Track: Houston, Tex., 2.07 miles.

Illinois Central

First Track: Coffeeville, Miss., to WV Junction, 11.66 miles, in connection with a relocation project which shortened the line by 2.02 miles.
Important Work Undertaken: Modernization of classification yard, Markham yard, Chicago, $1,221,790 (100); renewal of spans in bridge over Ohio river, Cairo, Ill., $6,266,920 (30).

Louisville & Nashville

First Track: Doe Run spur, Long Branch, Ky., to Doe Run, 2.37 miles.
Important Work Undertaken: Installation of C.T.C., including necessary track changes, Amqui, Tenn., to Henderson, Ky., $1,821,639 (95).

McCloud River

First Track: Bartle, Cal., to Bear Flat, 12.68 miles.

Minneapolis & St. Louis

Important Work Undertaken: Construction of two-story, concrete, brick and steel office building, Minneapolis, Minn., $1,150,000 (75).

Missouri-Kansas-Texas

Important Work Undertaken: Revision of alinement account of construction of Whitney dam, near Whitney, Tex., $4,000,000 (75).

Missouri Pacific

Important Work Undertaken: Construction of consolidated freight station and office building, including track work, driveways and drainage system, St. Louis, Mo., $1,800,000 (25); revision of grade and alinement, Bismarck, Mo., to Piedmont, $1,200,000 (100); revision of grade and alinement, Vulcan, Mo., to Gads Hill, $1,500,000 (100); construction or reconstruction of all fills, bridges and other facilities on three divisions in connection with raising main tracks at levee crossings, cost shared by federal government, $4,810,000 (50).

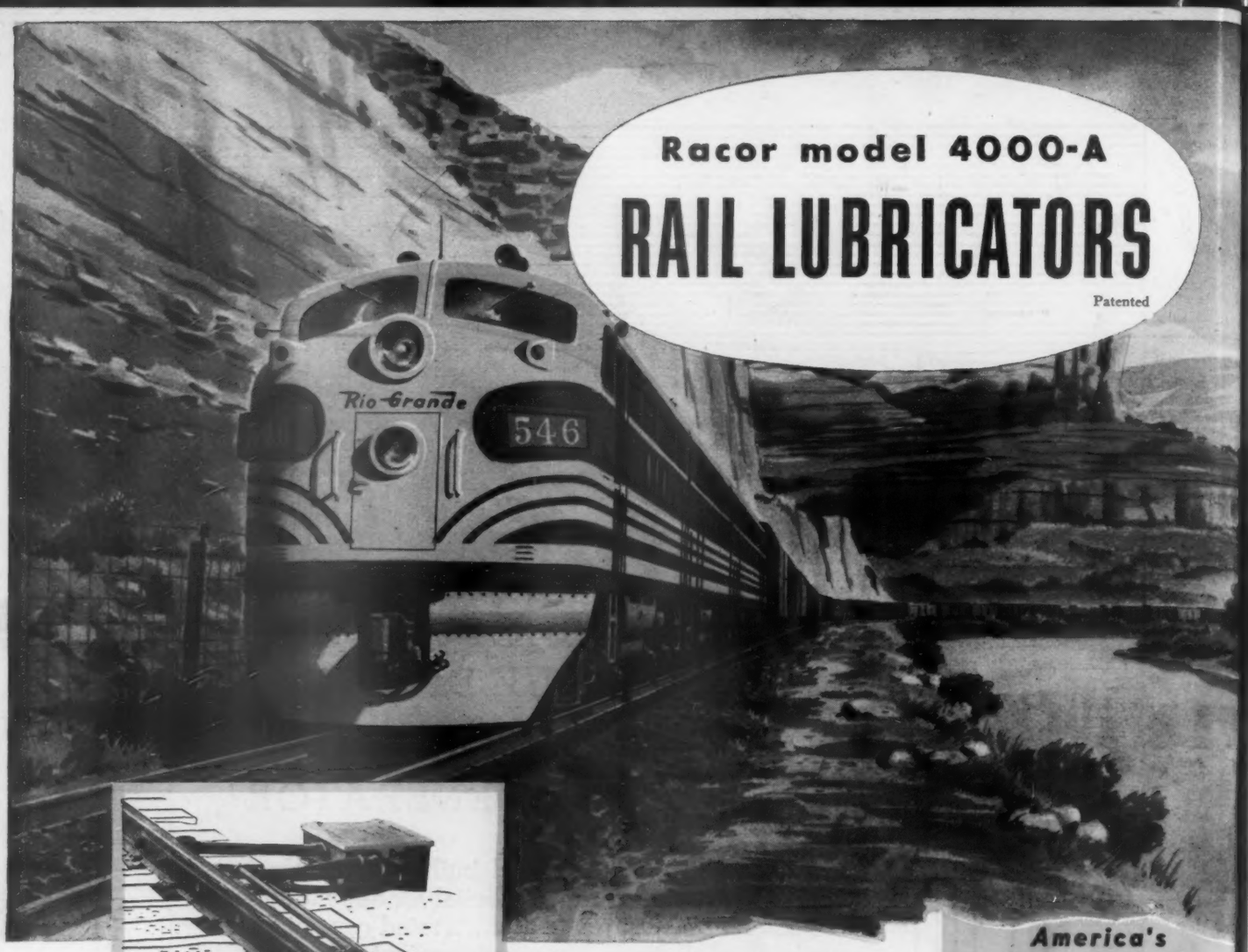
Monongahela Connecting

First Track: Pittsburgh, Pa., 0.24 mile.
Second Track: Pittsburgh, Pa., 1.05 miles.
New Road Under Construction: Pittsburgh, Pa., 0.49 miles.
New Road Under Survey: Pittsburgh, Pa., 0.15 mile.
Important Work Undertaken: Construction of a new classification and storage yard with a car capacity of 286 cars, 25th Street yard at Jones & Laughlin Steel Corp., Pittsburgh, Pa., $1,550,000 (100); construction of additional railroad classification facilities, 30th Street yard, Pittsburgh, Pa., $1,490,689 (40).

Monongahela

First Track: Grant Town, W. Va., to point south of Fairview, 8.57 miles.
Important Work Undertaken: Construction of single track complete with two bridges, Grant Town, W. Va., to point on Sugar Run, including 220 ft. of highway, 2,700 ft. of tail track with one bridge, 900 ft. of subgrade for a wye connection, and a bridge at Riversville, W. Va., $1,980,000 (95).

(Continued on page 237)



Racor model 4000-A

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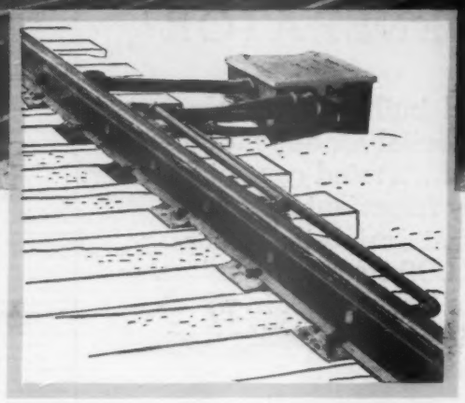

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AMERICAN Brake Shoe COMPANY

RAMAPO AJAX DIVISION

109 North Wabash Avenue, Chicago 2, Ill.

(*Continued from page 234*)

New York Central

First Track: Chili Jct., N. Y., 1.50 mile.

Important Work Undertaken: Construction of United Fruit Company terminal, Weehawken, N. J. (50); construction of diesel-locomotive servicing facilities, Watertown, N. Y. (5); elimination of grade crossing, Ashford avenue, Ardsley, N. Y. (100); elimination of five grade crossings, Buffalo, N. Y. (50); elimination of two grade crossings, Hawthorne, N. Y. (100); elimination of grade crossing, Kingston, N. Y. (40); elimination of grade crossing, Lancaster, N. Y. (10); elimination of grade crossing, Lyons, N. Y. (100); elimination of four grade crossings, Rochester, N. Y. (20); reconstruction of bridge, Peekskill, N. Y. (100); construction for Major Deegan boulevard, New York City (15); construction of bridge over Cuyahoga river, Cleveland, Ohio (started); improvement of passenger terminal, Toledo, Ohio (100); grade crossing elimination, Holland, Ohio (15); construction of new icing plant and rehabilitation of the West Shore, Chili Jct., N. Y. to Wayneport.

(Michigan Central) *Important Work Undertaken*: Construction of bridge carrying Main street (extended), US-27, over New York Central right of way and track and over adjacent Grand river, Lansing, Mich. (100).

The approximate cost of these projects and those involving, individually, an expenditure of $100,000 or more, will amount to $62,161,000.

New York, Chicago & St. Louis

Important Work Undertaken: Construction of engine terminal, including a new enginehouse and machine turntable, Calumet yards, Chicago, $2,778,000 (90); construction of engine terminal facilities, East Wayne, Ind., $2,297,000 (75).

(Wheeling & Lake Erie) *Important Work Undertaken*: Construction of two Wellman-Hulett type, 17-gross-ton, electrically operated ore unloaders, Huron, Ohio, $1,800,000 (95); construction of a new vertical-lift-span bridge over the Cuyahoga river, total length 460 ft., Cleveland, Ohio, $2,290,883 (25); extension of mine track, including construction of yard facilities, Georgetown, Ohio $1,465,256 (85).

Norfolk & Western

First Track: Cooper, W. Va., to Lick Branch, 5.28 miles, in connection with a relocation project which shortened the line by 0.36 mile.

Second Track: Cooper, W. Va., to Lick Branch, 5.28 miles, replacing 5.01 miles.

Important Work Undertaken: Construction of 5.28 miles of new double-track main line, Cooper, W. Va., to Lick Branch, including a double-track tunnel about 7,100 ft. long, a new coaling station and wye track, installation of position-light automatic signals with coded track circuits, a high-tension signal transmission line and a low-tension line, Bluefield, W. Va. to Iaeger, $11,912,000 (100); installation of 2,200 ft. of main-line track, 4,050 ft. of siding, construction of a four-story fireproof storehouse building, with necessary concrete driveways, retaining walls and platforms, an overhead footbridge, a concrete platform and shed at oil house, extension of crane runway, relocation of tracks, fence and pole lines, Roanoke, Va., $1,874,400 (100); construction and extension of engine-servicing facilities, including a fireproof building, a 200,000 gal. water tank, standpipe and pipe lines, an engine-washing platform with shed and toilets, hydraulic ash-handling plant, wash and locker facilities, an extension to the enginehouse, drop and inspection pits, concrete roadways and alterations to existing tracks, and the provision of necessary air, steam, oil, and electric lines, plus the installation of boilers, stokers and coal-handling equipment at the steam plant, Portsmouth, Ohio, $1,516,000 (35).

Pennsylvania

First Track: Near Cadiz, Ohio, southwestward, 3.89 miles; from point on this track to Georgetown, Ohio, 1.03 miles; from Georgetown, Ohio, to connection with Nickel Plate, 1.31 miles.

Important Work Undertaken: Philadelphia improvements, Philadelphia, Pa., (indefinite); extension of old and construction of new diesel-locomotive terminal facilities, Enola, Pa., (100); extension of pier No. 1, Baltimore, Md. (100); Construction of Sparrows Point spur, Baltimore, Md. (99); construction of yard and tracks to serve the Studebaker Corporation, Adams, N. J. (10); interchange facilities with New York, Susquehanna & Western, Jersey City, N. J. (1); passenger terminal improvements, Pittsburgh, Pa. (5); revision of alinement, Blairsville, Pa., to Avonmore, (99); construction of new freight warehouse, Pittsburgh, Pa. (65); elimination of clearance restrictions at Panhandle Division tunnels No. 5, 6, 7, 8, and 10, Gould, Ohio, to west of Bowerston (100). The approximate cost of these projects, $35,043,656.

Reading

Important Work Undertaken: Improvements to Reading Terminal station building, including installation of electric stairways, elevators, ticket office, stores, etc., Philadelphia, Pa., $1,800,000 (100); reconstruction of bridge over Vine street, joint work with State, Philadelphia, Pa., $1,650,000 (100).

St. Louis-San Francisco

First Track: Near Kramer, Kan., 0.57 mile.

Important Work Undertaken: Construction of new freight yard, including track capacity of 2,500 cars, mechanical facilities, a diesel shop, system wheel shop and incidental facilities, Springfield, Mo., $4,300,000 (85).

Seaboard Air Line

Important Work Undertaken: Modified C.T.C., Hamlet, N. C., Charleston, S. C., and Savannah, Ga., $3,800,000 (100); modified C.T.C., Atlanta, Ga., to Birmingham, Ala., $3,100,000 (50); replacing existing drawbridge with vertical-lift drawbridge, Savannah River bridge, Savannah, Ga., $1,500,000 (10); relocation of shops and yard, Hialeah, Fla., $2,625,000 (20).

Southern

Important Work Undertaken: Construction of additional yard tracks, and alterations to existing tracks, including a new interlocking plant and interyard communication system, Inman yard, Atlanta, Ga., $1,929,000 (100); reconstruction of John Sevier yard, Knoxville, Tenn., $2,751,100 (50); construction of yard and engine-terminal facilities, Ernest Norris yard, Birmingham, Ala., $9,200,000 (5); replacement of steel bridge with a new steel lift span, including approaches and piers, Tombigbee river near Jackson, Ala., $1,970,000 (100); replacing Cumberland River bridge and grading new approaches in connection with a revision of grade and alinement, Burnside, Ky., $4,000,000 (100); extension of present yard and construction of engine terminal, Press Street yard, New Orleans, La., $955,000 (60).

(Cincinnati, New Orleans & Texas Pacific) *Second Track*: Cedar Grove, Ky., to Tateville, 3.54 miles.

Southern Pacific

New Road Under Construction: Near Armet, Ore., to the vicinity of Jasper, being constructed by government to replace portion of main line for new Meridian dam, 23.06 miles.

Important Work Undertaken: Conversion of rider-operated hump yard to an automatic car-retarder yard, including the extension of receiving-yard tracks and replacement of tracks in hump yard which will be laid out in five groups of eight tracks each; construction of seven buildings of permanent type and five prefabricated buildings; includes the installation of a journal-box oiler at hump, 9,510 ft. of drainage pipes, 5,800 ft. of air and water lines, and the construction of power lines, installation of communication facilities, involving high and low-level speakers, two-way radio control from humpmaster's office to engines and to yardmaster's office, plus the construction of a pedestrian overcrossing for employees, Taylor, Cal., $2,448,045 (87).

Construction of a grade-separation project in which three railroad tracks were depressed and eight overcrossings constructed through central district of city, and one overcrossing constructed to the east of El Paso, Tex., for which Texas will pay $1,500,000, El Paso, $1,950,000, the Texas & Pacific and Union Depot Company, $140,000, and the Southern Pacific $1,890,000, a total of $5,480,000 (99).

Sumpter Valley

First Track: Baker, Ore., to South Baker, 1.00 mile.

Texas & Pacific

Important Work Undertaken: Raising grade of main line about 26 ft. across the Morganza floodway for a total of seven miles (grading and drainage structures only), McKneely, La., to Red Cross, $1,250,000 (100); construction of reinforced concrete trestle, 16,000 ft. long, Morganza floodway, La., $4,000,000 (100).

Toledo, Peoria & Western

Important Work Undertaken: Relocation of 4.52 miles of main track constructed by U. S. Government, as part of flood control project in connection with Farmdale dam across Farm creek, East Peoria, Ill., $3,000,000 (100).

Union

Important Work Undertaken: Replacement of Turtle Creek viaduct, Turtle Creek, Pa., $2,500,000 (40).

Union Pacific

New Road Under Construction: Hinkle, Ore., to Juniper, 17.15 miles (relocation).

Important Work Undertaken: Installation of automatic cab-controlling circuits; replacement of semaphore signals with color-light signals and the installation of 150 miles of new line-charging circuit, Summit, Neb., to North Platte, $1,895,614 (100); replacement of present two-indication, non-coded cab signals with three-indication coded cab signals and respacing of present color-light signals, North Platte, Neb., to Cheyenne, Wyo., $1,663,000 (25); installation of automatic cab-controlling circuits, including the replacement of 227 semaphore signals with 200 color-light signals and rearrangement of pole line, Laramie, Wyo., to Green River, $1,241,966 (100); installation of 78.6 miles of C.T.C., Menoken, Kan., to Marysville, $1,594,076 (20); construction of 17.15 miles of new main line and a new 1,130-car terminal yard including engine terminal, oil facilities, and depot, at Hinkle, Ore., replacing existing main line between Messner, Ore., and Juniper account of the construction of McNary dam, Hinkle, Ore., to Juniper, $4,661,756 (35); relocation of 95,250 ft. of track and telegraph line, installation of ballast, and color-light signals required by construction of McNary dam, Sand, Ore., and Attalia, Wash., and between Wallula, Wash., and Reese, $1,063,166 (20).

Virginian

Important Work Undertaken: Rehabilitation and extension of power plant, Narrows, Va., $6,453,000 (95).

Wabash Railroad

First Track: Baylis, Ill., to Kinderhook, 11.20 miles.

Important Work Undertaken: Construction of 11.2 miles of new line and the removal of 11.3 miles of existing line, Baylis, Ill., to Kinderhook, $1,548,856.

Western Pacific

Important Work Undertaken: Installation of C.T.C., including the extension of seven sidings to 125-car capacity each, Gerlach, Nev., to a point 81 miles east, $1,242,000 (75).

CANADA

Canadian National

Important Work Undertaken: Construction of car-shop facilities, including car-repair shop, paint shop, trackwork, extension to stores building and extension to work-equipment shop, including the purchase of a building, Point St. Charles, Que., $3,575,000 (69); construction of International Aviation Building to provide general headquarters and terminal facilities, Montreal, Que., $5,400,000 (100); construction of freight-shed buildings, including a general freight office, platforms, teamways, team tracks, etc., replacing freight-handling facilities destroyed by fire, Montreal, Que., $5,245,000 (42); construction of steam plant at Nazareth street to serve present Central Station, Montreal, Que., $1,070,000 (100); installation of C.T.C., West Junction, Que., to St. Rosalie Junction, $1,503,000 (100); diversion of main-line passenger tracks and enlargement of yard, construction of car-repair buildings and other facilities, Mimico, Ont., $2,500,000; installation of C.T.C. on 147.84 miles of single main-line track, between Foleyet, Ont., and Hornepayne, Oba subdivision, $1,051,550 (15); improvements to Central Station, Montreal, Que., including approach facilities, extension of tracks, removal of five buildings, the construction of two bridges and an additional lead to yard ladder, $4,000,000 (6); construction of new freight shed with adjoining office, Edmonton, Alta. (100); construction of additional trackage and rearrangement of existing trackage, Edmonton, Alta, $1,250,000 (65).

Canadian Pacific

First Track: Halkirk, Alta., North, 1.70 miles.

New Road Under Construction: Mattawa, Ont., to Timiskaming, Que., 37.90 miles; Halkirk, Alta., north, 15.00 miles.

Important Work Undertaken: Construction of new terminal yard, consisting of receiving yard, a hump with car retarders, classification and departure yard, together with shop and enginehouse, car-repair yard and all facilities, St. Luc yard, Montreal, Que., $10,000,000 (100); construction of central heating plant to serve the station, hotel, freight sheds and coach-yard trackage, station power plant, Winnipeg, Man., $1,000,000 (95).

Pacific Great Eastern

First Track: M.P. 2.5 to M.P. 10, in British Columbia, 7.50 miles, part of Quesnel, B. C., to Prince George extension.

New Road Under Construction: M.P. 10 to Prince George, B. C., 72.50 miles.

New Road Under Survey: Prince George, B. C., to Dawson Creek, 277 miles. (projected); Squamish, B. C., to North Vancouver, 40 miles.

GENERAL NEWS

Three Unions Reject Wage Agreement

Will insist on 40-hr. week and 35-cent raise for all "ops"

Following the precedent set by the Brotherhood of Locomotive Engineers on December 28, general chairman of the Brotherhood of Railroad Trainmen, the Brotherhood of Locomotive Firemen & Enginemen and the Order of Railway Conductors have all voted to reject the "memorandum of agreement" on wages and working conditions formulated by railroad and union representatives at Washington, D. C., on December 21, 1950.

The conductors and firemen, at least, indicated particular dissatisfaction with the agreement's postponement of the effective date of a 40-hr. week for operating employees, and with its provisions for different wage increases for men in train and yard service. They indicated they would hold out for an immediate 40-hr. work week and for a uniform pay increase of at least 35 cents per hour for all operating employees.

The rejections apparently had the effect of handing the dispute back to government mediators for another attempt at settlement. Presidential Assistant John R. Steelman, through whose efforts the December 21 agreement was reached following last month's "wildcat" strikes of B. R. T. switchmen, was reported to have indicated that government sponsored talks might be renewed at Washington by January 15, but it was understood that such talks would have to wait on a meeting of officials of all four brotherhoods.

The conductors, however, raised doubts that the dispute could be settled by a government mediator, stating that the situation "is beyond the effective handling by any government conciliator who is not versed in train operation or is not familar with schedule applications and working conditions—including rates of pay—of the operating employees affected."

Similar views were expressed by D. B. Robertson, president of the B. of L. F. & E., in a statement issued at Cleveland, Ohio, on January 5, in which he said in part:

"The 40-hr. week is sawed and hammered beyond recognition as offered to us. The proposed wage adjustment of 25 cents actually is a reduction in the take-home pay of yardmen when and if they go on a five-day week. There is no time and a half rate for the sixth and seventh day of work. Even the eventual date for making this misshapen arrangement effective would be delayed until some distant and uncertain time when the manpower situation permits. . . .

"What the White House offer actually amounts to is this: Our men are being asked to accept a settlement inferior to that granted other rail workers almost two years ago and to accept it at the time when all workers are seeking still another wage adjustment to keep pace with rapidly rising living costs. . . .

"These issues involve delicate employer-employee relationships. They should be settled by and between the worker and his employer. Certainly, if a third party is to have a strong voice in disposal of the dispute he must be deeply versed in the traditions and practical operation of a railroad. . . .

"All in all, the administration's proposal falls far short of the minimum requirements of these workers and fails to provide a fair basis upon which to establish the high morale among workers who will operate America's railroads in the trying days all of us know lie ahead."

The reaching of the settlement proposed in the "memorandum of agreement" was reported on page 30 of the *Railway Age* of December 23; its details were outlined on page 36 of the issue of December 30; and the engineers' rejection of the agreement was noted on page 50 of last week's issue.

Railroads to Ask 6 Per Cent Increase in Freight Rates

Traffic officers representing major railroads of the east, west and south announced at Chicago on January 5 that their roads will petition the Interstate Commerce Commission and the various state regulatory bodies for authority to increase freight rates and charges 6 per cent. This percentage increase would be subject to maximum increases of 4 cents per hundred pounds on sugar and lumber and 6 cents per hundred pounds on fresh fruits and vegetables and melons. On coal there will be a specific increase of 18 cents per net ton.

The traffic officers said the proposed increases are made necessary by wage increases obtained by operating employees, some of which are retroactive to October 1, 1950, and also to increased costs of materials and supplies to January 1, 1951. They pointed out that in the event railroad operating expenses should be further increased, it may be necessary to bring the changed situation to the attention of the commissions in a supplemental petition.

The announcement was made by John J. Fitzpatrick, chairman of the Traffic Executives Association of the Eastern Railroads; J. G. Kerr, chairman of the Southern Freight Association; and W. H. Dana, chairman of the Executive Committee of the Western Traffic Association.

The increases, estimated to add about $400 million per year to railroad operating revenues, would supersede a 4 per cent increase for which Eastern railroads petitioned the commission last December 1. (See *Railway Age* of December 9, page 52.)

81st Congress Ends, Making Way for 82nd

Many bills which died have been reintroduced

The eighty-first Congress adjourned sine die on January 2, and on the following day the eighty-second Congress convened for its initial session. On the day before it died, the eighty-first Congress passed and sent to President Truman the bill, S.3295, which amends the Railway Labor Act to authorize the inclusion in labor-management agreements of provisions for a union shop and a check-off of union dues.

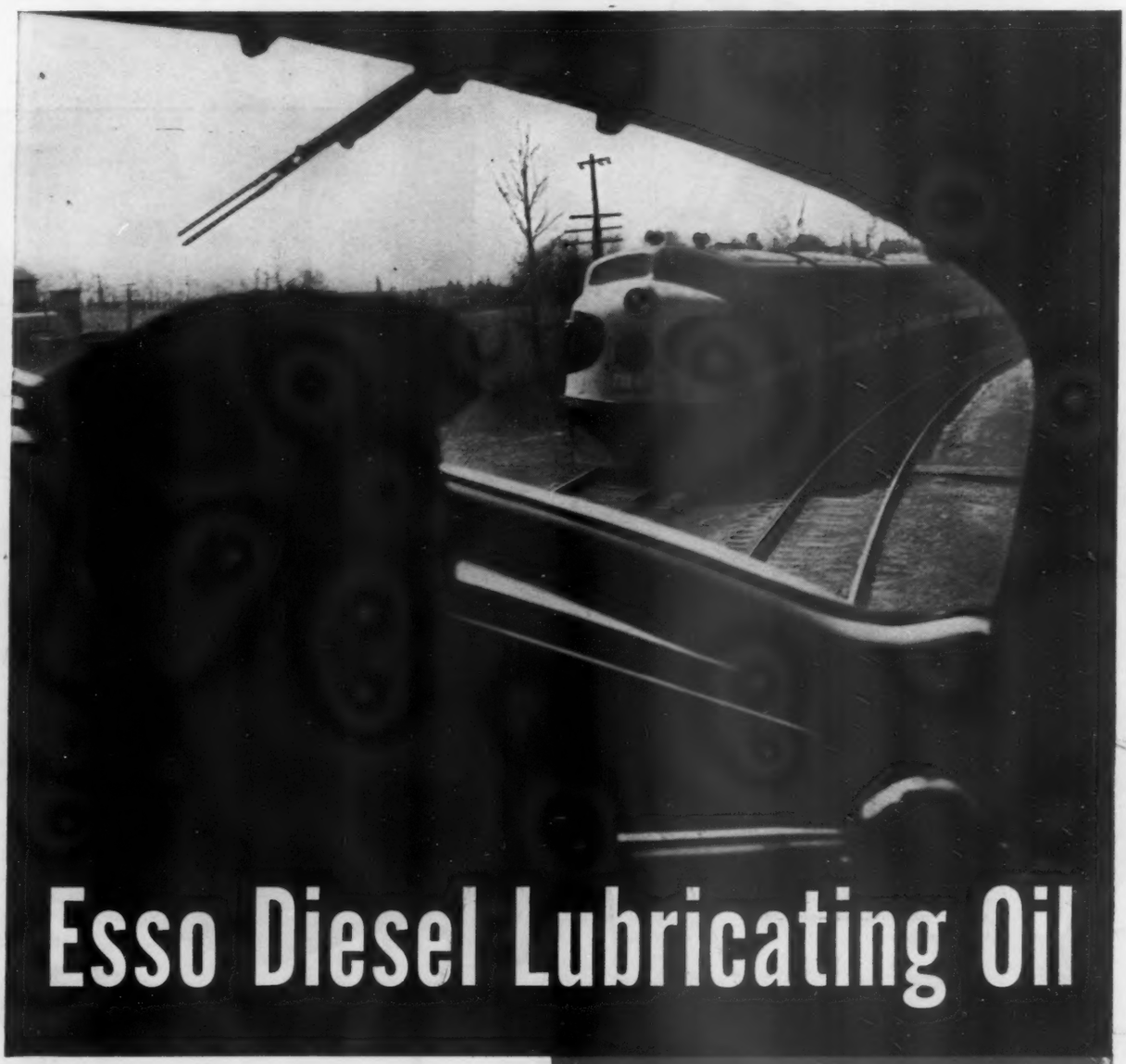
When this issue went to press, the President had not acted on the bill. Except for a recess from September 23 until November 27 the eighty-first Congress' closing session ran through 1950.

All proposed legislation pending at various stages short of final enactment died with the sine die adjournment; but many of the same proposals were back the next day in bills introduced in the House as the eighty-second Congress convened. These included the so-called radio-rules bill which would broaden the Interstate Commerce Act's section 25, which now contains provisions of the so-called Signal Inspection Act, to give the Interstate Commerce Commission authority over installations of radio and other train-communication systems, and over train-operating rules in connection with such installations and installations of signaling devices over which the commission already has authority under the present law. The first radio-rules bill introduced in the new Congress is H.R.269, sponsored by Representative Price, Democrat of Illinois.

Also introduced promptly in the new Congress were several resolutions proposing to approve the United States-

(*Continued on page* 242)

"Tailor-made" for Railroad Diesels



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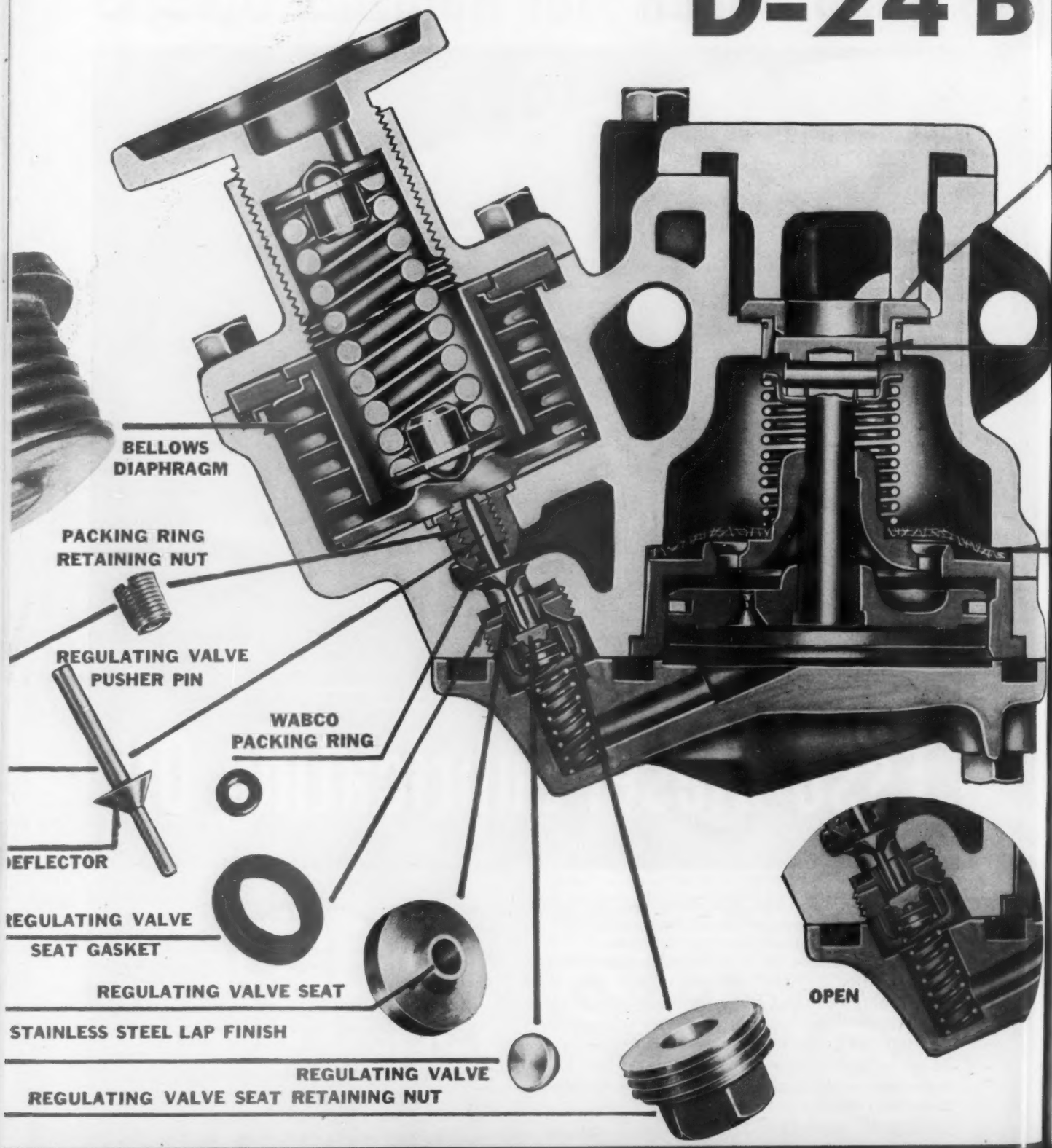
D-24 B



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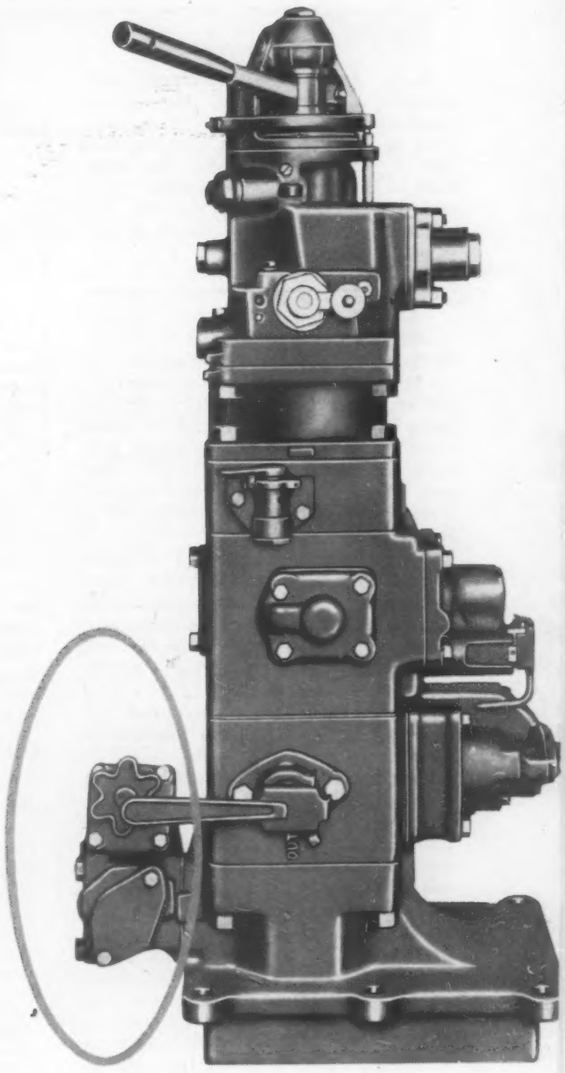

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Jacob Aronson Retires

Jacob Aronson, vice-president and general counsel of the New York Central System at New York, retired on January 5 at his own request, due to illness. Mr. Aronson has been head of the law department since 1933 and has served the N.Y.C. and the railroad industry for a period of 44 years.

(*Continued from page* 238)

Canada agreement for development of the St. Lawrence seaway and power project. Such resolutions include House Joint Resolutions 2, 3, 4, and 15, sponsored in turn by Representatives Kilburn, Republican of New York, Dingell, Democrat of Michigan, Blatnik, Democrat of Minnesota, and Dondero, Republican of Michigan.

Among other repeaters is a proposal to repeal the Reed-Bulwinkle Act (now section 5a of the I. C. Act) which was enacted in 1948 to provide immunity from the anti-trust laws for carriers participating in rate procedures agreements approved by the I.C.C. The new repealer, H.R.542, was introduced by Representative O'Hara, Republican of Minnesota.

In addition to the union-shop and check-off bill, there was enacted at last year's session of the eighty-first Congress an act which amended the I. C. Act's Part IV to accord common-carrier status to freight forwarders, and to authorize forwarders to maintain contract-rate arrangements with motor carriers for terminal-to-terminal trucking for distances up to 450 miles. Other legislation passed at the session included that which exempted reduced-rate furlough fares accorded to members of the armed forces from the 15 per cent tax on amounts paid for the transportation of persons; and that which amended the Part II of the I. C. Act to give the I.C.C. jurisdiction over transportation within continental United States (exclusive of Alaska) of motor-carrier traffic which originates in or is destined to a territory of the United States.

RRs Affected by Tax Acts

Meanwhile, there were enacted the usual rivers-and-harbors and federal-aid-highway acts, while appropriations for the government's regulatory and promotional activities in the transport field were provided. Like all business, the railroads will be affected by the acts which increased corporate income taxes and imposed excess profits taxes. And the Defense Production Act provided the basis for establishment of the Defense Transport Administration of which Interstate Commerce Commissioner James K. Knudson is the director.

Passed by the Congress and vetoed by the President was a bill which was designed to eliminate present uncertainties as to the legality of freight charge absorptions by sellers undertaking to reach distant markets. On the other hand, the Congress disapproved the President's proposal to vest in himself authority to designate the I.C.C.'s chairman while making that official responsible for the internal administration of the commission. An adverse resolution adopted by the Senate killed the proposal.

A feature of the eighty-first Congress was the survey of domestic land and water transportation which was conducted by a subcommittee of the Senate committee on interstate and foreign commerce. At public hearings in connection with the survey, the railroads made a comprehensive presentation of their recommendations for sound solutions of current transport problems. The subcommittee was headed by former Senator Myers, Democrat of Pennsylvania, who was defeated for reelection in the November, 1950, election. It is understood that the parent committee's chairman, Senator Johnson, Democrat of Colorado, will take over direction of the subcommittee's work. The subcommittee has filed no report, but its views are expected to be reflected in bills comprising a proposed legislative program which are now being drafted by its staff.

Other Bills Listed

In addition to those mentioned above, the new Congress got various other House bills of interest to the railroads. They are listed below, together with their sponsors.

H.R.2, to create an independent Air Safety Board (Crosser of Ohio).

H.R.63, to amend the Railroad Retirement Act of 1937 so as to provide full annuities at half salary or wages, based on the five highest years of earnings, for individuals who shall have completed 30 years of service (Furcolo of Massachusetts).

H.R.80, to establish a National Superhighway Commission to provide for plans and surveys for the construction of a national superhighway system (Hand of New Jersey).

H.R.104, to amend the Civil Aeronautics Act to authorize the construction, operation, and maintenance of heliports on or near government buildings (Keogh of New York).

H.R.114, to amend the Civil Aeronautics Act (Keogh of New York).

H.R.134, to authorize and direct the Civil Aeronautics Board to study the need for smog control in the vicinity of airports in order to promote safety in air navigation (King of California).

H.R.166, to provide for a 25 per cent increase in the annuities and pensions payable to railroad employees and to their survivors (Brooks of Louisiana).

H.R.189, 190, and 191, to provide for the separation of subsidy from air-mail pay (Heselton of Massachusetts).

H.R.196, to amend the Civil Aeronautics Act to authorize the construction, operation, and maintenance of heliports on or near government buildings (Hinshaw of California).

H.R.198, to provide for the development of civil transport aircraft adaptable for auxiliary military service (Hinshaw of California).

H.R.205, to establish a Merrimack Valley Authority (Lane of Massachusetts).

H.R.207, to amend the Civil Aeronautics Act to require the preparation of passenger lists for all flights of commercial air lines (Lane of Massachusetts).

H.R.222, to amend the River and Harbor Act of 1948 to provide for reports by the chief of engineers with respect to the national defense value of river, harbor, and waterway improvements (Larcade of Louisiana).

H.R.382 and 456, to amend the Railroad Retirement Act of 1937, so as to provide full annuities at half salary or wages, based on the five highest years of earnings, for individuals who have completed 30 years of service or have attained the age of 60. (St. George of New York and Cunningham of Iowa).

H.R.505, 506, 507, and 508, to provide for the separation of subsidy from air-mail pay (Kennedy of Massachusetts).

H.R.541, to establish a Federal Traffic Bureau (O'Hara of Minnesota).

H.R.546, to amend the Interstate Commerce Act to prohibit the segregation of passengers on account of race or color (Powell of New York).

H.R.552, to prohibit discrimination in employment because of race, color, religion, or national origin (Powell of New York).

H.Res.22, to create a select committee to conduct an investigation and study of Communist activities among merchant seamen and their unions and Communist infiltrations into transportation industries (Heller of New York).

Eleven Months' Net Income $662 Million

Net railway operating income for 1950 period is $924.6 million

Class I railroads in the first 11 months of 1950 had an estimated net income, after interest and rentals, of $662,000,000, compared with $352,000,000 in the corresponding period of 1949, according to the Bureau of Railway Economics of the Association of American Railroads. The 11-months' net railway operating income, before interest and rentals, was $924,677,405, compared with $616,342,739.

CLASS I RAILROADS — UNITED STATES

	1950	1949
Month of November		
Total operating revenues	$ 862,200,971	$ 704,805,862
Total operating expenses	618,610,515	537,348,073
Operating ratio—per cent	71.75	76.24
Taxes	119,090,878	77,371,410
Net railway operating income (Earnings before charges)	110,000,603	75,407,429
Net income, after charges (estimated)	86,000,000	54,000,000
Eleven Months Ended November 30, 1950		
Total operating revenues	8,545,280,557	7,869,491,774
Total operating expenses	6,413,851,663	6,323,430,204
Operating ratio—per cent	75.06	80.35
Taxes	1,041,661,262	776,112,206
Net railway operating income (Earnings before charges)	924,677,405	616,342,739
Net income, after charges (estimated)	662,000,000	352,000,000

Estimated results for November showed a net income of $86,000,000, compared with $54,000,000 for November, 1949. Net railway operating income for the 1950 month was $110,000,603, while in November, 1949, it was $75,407,429. In the 12 months ended with November, the rate of return averaged 4.15 per cent, compared with 2.88 per cent for the 12 months ended with November, 1949.

Gross in the 11 months of 1950 amounted to $8,545,280,557, compared with $7,869,491,774 in the same period of 1949, an increase of 8.6 per cent. Operating expenses amounted to $6,413,851,663, compared with $6,323,430,204, an increase of 1.4 per cent.

Eighteen Class I roads failed to earn interest and rentals in the first 11 months of 1950, of which nine were in the Eastern district, two in the Southern region, and seven in the Western district.

Eastern Results

Class I railroads in the Eastern district in November had an estimated net income of $20,000,000, compared with $18,000,000 in November, 1949. In the 11 months, their estimated net income was $225,000,000, compared with $94,000,000 in the same period of 1949.

Their net railway operating income in November amounted to $30,985,654, compared with $27,623,768 in November, 1949. Those same roads in the 11 months had a net railway operating income of $357,681,268, compared with $238,884,504 in the same period of 1949.

Gross in the Eastern district in the 11 months totaled $3,776,193,188, an increase of 8.6 per cent compared with the same period of 1949. Operating expenses totaled $2,952,639,665, an increase of 2.9 per cent.

South Doubles Net

Class I roads in the Southern region in November had an estimated net income of $14,000,000, compared with $7,000,000 in November, 1949. In the 11 months their estimated net income was $103,000,000, compared with $52,000,000 in the same period of 1949.

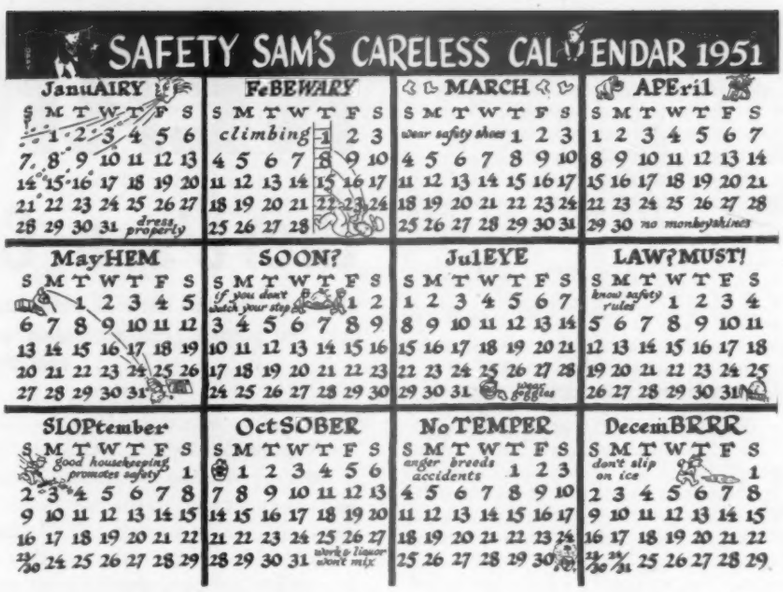
Those same roads in November had a net railway operating income amounting to $18,598,915, compared with $11,002,536 in November, 1949. Their net railway operating income in the 11 months amounted to $140,835,195, compared with $93,070,877 in the same period of 1949.

Gross in the Southern region in the 11 months totaled $1,180,772,747, an increase of 9.3 per cent compared with the same period of 1949, while operating expenses totaled $875,772,506, an increase of one per cent.

Class I roads in the Western district in November had an estimated net income of $52,000,000, compared with $29,000,000 in November, 1949. Their estimated net income in the 11 months was $334,000,000, compared with $206,000,000 in the same period of 1949.

Their net railway operating income in November amounted to $60,416,034, compared with $36,781,125 in November, 1949. Those same roads in the 11 months had a net railway operating income of $426,160,942, compared with $284 387,358 in the same 1949 period.

Gross in the Western district in the 11 months totaled $3,588,314,622, an increase of 8.4 per cent compared with the same period of 1949, while operating expenses totaled $2,585,439,492, a decrease of 0.04 per cent.



THIS SAFETY CALENDAR, produced in red, green and white by the New York division of the Pennsylvania, features the two characters usually in evidence in the division's monthly Safety Highlights, "Safety Sam" and "Careless Cal"

38.8 Million Cars Loaded In 1950; 8.3% Over 1949

Loading of revenue freight on railroads in the United States totaled 38,899,523 cars in 1950, according to the Association of American Railroads. This was an increase of 2,988,262 cars, or 8.3 per cent, over 1949.

"Railroads in 1950 handled freight traffic with all-time record efficiency," the A.A.R. statement said. "Establishing new records in both train loads and train speeds, the average freight train achieved a record transportation output equivalent to moving more than 20,000 tons of freight one mile in an hour. This was nearly 14 per cent above the peak output of the years of World War II and almost three times as much as it was 30 years ago."

The 1950 and 1949 loadings by commodities are compared in the accompanying table.

	1950	1949	Per Cent Increase	Per Cent Decrease
Grain and grain products	2,465,596	2,583,403		4.6
Livestock	491,116	551,098		10.9
Coal	7,241,163	6,217,627	16.5	
Coke	727,236	588,198	23.6	
Forest products	2,222,431	1,952,186	13.8	
Ore	2,529,177	2,210,486	14.4	
Merchandise, L.C.L.	4,268,367	4,588,514		7.0
Miscellaneous	18,954,437	17,219,749	10.1	
TOTAL	38,899,523	35,911,261	8.3	

Santa Fe Exhibits New "Super Chief" Dome Cars

Two new dome-lounge cars, specially designed for the new "Super Chief" which is scheduled to go into service January 28, and incorporating the new "Turquoise Room," were exhibited in Chicago by the Atchison, Topeka & Santa Fe, to the press on January 9 and to the public commencing January 12. Also exhibited was an ultra-modern diner designed for use on the new train.

The dome car — there will be one on each train — is divided into five rooms: the "Turquoise Room," lower cocktail lounge, main lounge room, parlor-observation dome, and private writing desk room. The Santa Fe believes this car to be "one of the most exciting and glamorous of modern railway passenger cars."

The "Turquoise Room," named after the travelers' stone of the Southwest, is designed for dining and cocktail service for private parties. It features turquoise, silver and gold decoration, accordian-type sliding doors, specially designed service plate to harmonize with the decorative treatment

of the room, and a full-color reproduction of a genuine turquoise medallion incorporated in a modern "shadow box." The "Pleasure Dome" features a revolving parlor-type chair. The entire car has decorative schemes in colors typical of the Southwest.

Public exhibitions of these new "Super Chief" dome-lounge and dining cars were held in Beverly Hills, Cal., January 13; and will be held in Pasadena, January 17; Kansas City, Mo., January 18; San Bernardino, Cal., January 23; and San Diego, January 25.

Canadian Car Loadings

Despite the fact that operations of major Canadian railways were hampered during the year by severe floods in Manitoba, and almost completely halted for nine days last August by a strike of some 124,000 non-operating employees, car loadings for the full year 1950 were only 1,007 cars below the 1949 total, while the number received from connecting lines in the United States was substantially greater. Total 1950 loadings, according to the Dominion Bureau of Statistics, were 3,905,667 cars, as compared with 3,906,674 cars loaded in 1949; cars received from U. S. connections in 1950 numbered 1,648,588 against 1,597,054 in 1949.

For the final week of 1950, ended December 30, loadings were 54,396 cars, compared with 74,389 cars for the preceding non-holiday week and 49,011 cars for the corresponding week of 1949.

	Revenue Cars Loaded	Total Cars Rec'd from Connections
Totals for Canada:		
December 30, 1950	54,396	30,813
December 31, 1949	49,011	24,518
Cumulative totals for Canada:		
December 30, 1950	3,905,667	1,648,588
December 31, 1949	3,906,674	1,597,054

Car loadings in the United States for the week ended January 6 were not available when this issue of *Railway Age* went to press.

5 Railroads, 3 Suppliers "Excellently Managed"

Five railroads and three railroad supply companies are among 238 firms throughout the United States and Canada which have been awarded "certificates of management excellence" for the year 1950 by the American Institute of Management.

The awards, which will hereafter be given annually, are based on the institute's continuing study of some 2,000 leading business organizations, undertaken to provide a base for research into corporate policies and procedures. Credits for the awards are given for excellence in 10 separate fields—economic function, corporate structure, health of earnings growth, fairness to stockholders, research and development, directorate analysis, fiscal policies, production efficiency, sales vigor and executive evaluation.

Railroad winners of the 1950 awards were the Atchison, Topeka & Santa Fe; the Chicago, Burlington & Quincy; the Norfolk & Western; the Southern Pacific; and the Union Pacific. Supply companies receiving similar awards were the American Brake Shoe Company; General Motors Corporation; and the Westinghouse Air Brake Company.

Conveyor Battle on Again in Ohio

One of the major controversies in the 1951 session of the Ohio legislature is likely to revolve around renewal by Riverlake Conveyor Belt Lines, Inc., of its effort to obtain the right of eminent domain for its proposed 100-mi. belt conveyor for coal and ore from the Ohio river at East Liverpool, Ohio, to Lake Erie at Cleveland or Lorain.

The conveyor project, which has previously been described in detail in *Railway Age*, is sponsored by the Riverlake company, headed by H. B. Stewart, Jr., president of the Akron, Canton & Youngstown. It is reportedly supported by coal and steel companies which would be in position to use its services, and by others, like the Goodyear Tire & Rubber Co., which would be likely to supply materials for its construction. This group includes several which are generally considered railroad suppliers also. C.I.O. steel and rubber unions and some A.F. of L. building trades unions are also said to be supporting the proposal.

Opposition comes from all major railroads serving the area except the A. C. & Y., and from various railroad labor unions. Opposition, it is understood, will be based on the ground that the belt line — with half its capacity expected to be under contract to a small group of coal and steel companies and the balance limited to the same type of shippers — is not a common carrier, but a contract carrier, with no obligation to the general public and, consequently, no right to eminent domain.

Reduction of Rail Taxes Recommended in Maryland

A reduction, estimated to total about $450,000 per year, in gross receipts taxes paid to the state of Maryland by railroads operating therein has been recommended in a recent report by the Maryland Tax Survey Commission.

The present tax is levied at the rate of 1.25 per cent on the first $1,000 of gross revenues per mile (in Maryland), 2 per cent on the next $1,000 of gross per mile, and 2.5 per cent on gross revenues per mile in excess of $2,000. The recommended new rates are 1 per cent on the first $5,000 of gross revenue per mile, 1.5 per cent on the next $5,000, and 2 per cent on all revenues in excess of $10,000 per mile. In 1948, on the basis of 1947 earnings, Maryland railroads actually paid $1,648,323 in gross receipts taxes, at an

average effective rate of 2.44 per cent. Under the new rates, the commission estimates they would have paid $1,193,994, a saving to the companies of $454,329, or 27.56 per cent. The average effective rate would have been 1.77 per cent.

A similar reduction is also recommended for sleeping car and express companies, which now pay 2.5 per cent on gross revenues. The commission proposes that this be reduced to 1 per cent on the first $100,000 of gross revenues, 1.5 per cent on the next $100,000, and 2 per cent on all gross revenues over $200,000. The Pullman company, the commission said, paid $14,351, and the Railway Express Agency $8,580, on their 1947 earnings at the flat 2.5 per cent rate; under the proposed rates Pullman would pay an average of 1.74 per cent, or $9,981, a tax reduction of $4,370, or 30.45 per cent, while R.E.A. would pay an average of 1.56 per cent, or $5,364, a tax reduction of $3,216, or 37.48 per cent.

In addition, the commission pointed out that "operating revenues of Railway Express and Pullman are taxable to those companies and, to the extent such revenues are paid to railroads for services rendered or as dividends, they are or may be taxable again as an element of railroad operating revenues." It therefore recommended that there be excluded from the taxable gross revenues of railway companies any revenues from express or Pullman service when such revenues have previously been directly taxed.

"That railroads are paying at a disproportionately high rate is obvious," the commission said, in explaining its recommendation for a reduction in railroad tax rates; adding that:

"Earnings of Maryland railroads [in 1888] ranged from more than seven per cent to nearly 9 per cent on investment. Railroad rates were unregulated and competition from other carriers relatively minor. The combined impact of public rate regulation, intense competition from other carriers and greatly increased costs of operation have resulted in substantial diminution of railroad earning capacity. Necessarily ponderous and relatively inflexible federal rate making procedures, together with the growth of competitive industries, have made it difficult if not impossible for railroads to shift a substantial part of their operating burden to their customers. As a result stockholders and frequently creditors have assumed greatly increased burdens. The return on the investment of all Maryland railroads for the period 1938-1948 averaged only 4.5 per cent."

Canadian Cabinet Denies E. & N. Tax Relief Plea

The Canadian Cabinet has declined to disallow a British Columbia act imposing provincial taxes on properties of the Esquimalt & Nanaimo, according to an Ottawa, Ont., statement by Justice Minister Garson.

The appeal for disallowance was made to the Cabinet by the Canadian Pacific, which owns a majority interest in the E. & N.; the Cabinet's action

climaxed a lengthy legal battle over the right of the B. C. provincial government to impose taxes on the railway.

The history of the case, Mr. Garson said, dates back to the time of Canadian confederation. British Columbia, which entered the Dominion on condition that a transcontinental railway be built, contended that that railway (the C. P.) should not end at Vancouver, B. C., but should take in the settled portions of Vancouver Island. There is nothing in the record to indicate that the Canadian government ever accepted any responsibility for such an island railway, but when it was finally built both the Dominion and provincial governments aided construction with cash or land grants, the land to be exempt from taxation so long as it remained in railway possession and was used for railway purposes.

N.P.A. Limits Inventories Of Scrap Iron and Steel

Order M-20, issued January 4 by the National Production Authority, is designed to keep iron and steel scrap moving to iron and steel producing mills by restricting scrap inventories "to a practicable working minimum, or the level of the preceding 60 days, whichever is less."

The order applies to scrap dealers, scrap brokers, automobile wreckers or producers of scrap. As defined by the order, "scrap" means "all ferrous materials, either alloyed or unalloyed, of which iron or steel is the principal component, including iron and steel rail and axles for rerolling purposes."

Long Island Acts to Install Additional Safety Devices

Acting upon safety recommendations made by the Interstate Commerce Commission, the New York state Long Island Rail Road Commission and the New York Public Service Commission, William H. Draper, Jr., trustee of the Long Island, has asked federal court authority to proceed immediately with plans to carry out those recommendations.

Mr. Draper's petition to the court asks specifically for authority to arrange for design of the safety system recommended by the I.C.C. in its report of December 18, 1950, (see *Railway Age* of December 23, page 31) as well as for the design of an extension of that system recommended by the L.I.R.R. Commission; to seek I.C.C. approval for immediate installation of automatic train stops on the Atlantic branch; and to develop a plan for the financing of other safety installations recommended by both commissions.

The various recommendations consist chiefly of installation or extension of existing installations of automatic cab signal and train control systems to all the railroad's most heavily traveled commuter lines, i.e., those between Pennsylvania Station in New York and Port Washington, Mineola, Hempstead

and Valley Stream. Parts of these lines, and some others, are already equipped with one or both devices in some form. Total cost of such installations has been tentatively estimated at $6,000,000, to be paid, Mr. Draper's petition indicates, by "issuance of trustee's certificates, by conditional sales agreement, by lease, or otherwise." On the Atlantic branch, between Brooklyn and Jamaica, most of which is already equipped with brake trippers, additional trippers would be installed at an estimated cost of $115,000, for which "cash is available."

The New York Public Service Commission, which, on January 4, released its own report on the November 22 wreck at Kew Gardens, agreed generally with the I.C.C.'s recommendations for additional cab signal and train control installations, admitting that such devices would "not necessarily have prevented" the Kew Gardens wreck, but maintaining that they "would have greatly lessened its seriousness." The state commission also made other recommendations of its own, specifically that crew registration practices be revised to provide for adequate checking on the physical condition of men reporting for duty; that the management direct "proper instruction" and training of brakemen and flagmen; that a "thoroughly tested light" be provided for the rear ends of trains in addition to present marker lights; and that the line report to the commission semi-monthly "all violations of operations and safety rules." The third recommendation, for additional rear lights, is already being complied with by the railroad, as reported in the *Railway Age* of December 23.

P.R.R. Answers P.S.C.

The Public Service Commission's report also stated that "We are convinced that absentee management coupled with absentee ownership is inconsistent with satisfactory service under safe operating conditions." This statement drew a sharp retort from Walter S. Franklin, president of the Pennsylvania, who said, in a signed advertisement published in all New York metropolitan papers on January 8:

"This criticism is entirely unjustified and is disproved by the facts.

"Since March, 1949, when the Long Island Rail Road went into bankruptcy, the Pennsylvania Railroad has had no control over the Long Island . . .

"Prior to that time and *during the period when the Pennsylvania Railroad was responsible for the Long Island, the safety record of the Long Island was an outstanding one for any railroad in the world.* For 23 years the Long Island carried an average of over 260,000 passengers per day without a fatal accident. Certainly this completely refutes the statement . . . that so-called absentee ownership is inconsistent with safe operating conditions.

"If any blame can be placed for the alleged unsatisfactory conditions on the Long Island Rail Road and for the alleged low state of morale on the Long Island, it must rest squarely on the New York Public Service Commission for its starvation policy. In spite of the vast increases

in wages and prices which occurred between 1918 and 1947, the New York Public Service Commission permitted the Long Island no increase in commutation fares during that entire span of years. The temporary increases which it granted since 1947 were too little and too late.

"Nothing tends to destroy the morale of an organization more rapidly than being forced to operate continuously at a loss, with constant criticism and ridicule.

"Every Eastern state in the United States granted the increase in basic passenger fares authorized by the Interstate Commerce Commission on November 28, 1949, except the Public Service Commission of New York. In spite of prolonged hearings, it has made no final decision either on the present commutation case or the basic fare case.

"The public may draw its own conclusions."

I.C.C. Won't Regulate Use of Passenger Cars

The Interstate Commerce Commission has ruled that it does not have jurisdiction to regulate types of cars used in non-emergency passenger-train service. This finding was made in Docket No. 30321, a case in which three passengers charged the Baltimore & Ohio with rendering "unreasonably discriminatory passenger service" by operating non-air conditioned cars in commuter service between Brunswick, Md., and Washington, D.C.

The charge of discrimination was based on an allegation that the B.&O. uses air-conditioned cars on its Baltimore-Washington run, while cars in the Brunswick-Washington service are old, in poor repair, and not air-conditioned.

In concluding that it has no authority over the types of cars used in passcenger service, the commission referred to previous cases in which it has held that it has authority to expedite and facilitate the movement of property but does not, in normal times, have jurisdiction to regulate the operation of passenger trains.

Air Transport Needs Get Top Priority "DO" Rating

The National Production Authority has authorized the Civil Aeronautics Administration to assign top priority "DO" ratings to orders for materials and equipment needed to maintain and expand civil air transport and the Federal Airways System.

An N.P.A. announcement accompanying the new order said this action was taken "in the interest of national defense." The authority to use "DO" ratings covers the procurement of materials for construction of 197 new planes on order as of November 1, 1950, as well as necessary replacement parts for present aircraft.

Authority granted to the C.A.A. under this order gives the air lines a possible higher priority for obtaining scarce materials than was granted to the railroads for their freight car construction program. Under the latter, the Defense Transport Administration, as

claimant agency for the railroads, was not given authority to apply the top "DO" rating in seeking steel for freight cars. (See *Railway Age* of November 4, 1950, page 74.)

"Civil aviation and the Federal Airways System played an important role in World War II," the N.P.A. said. It noted that the program of the Federal Airways System includes maintenance of existing federal airways, a joint military-civilian program for expansion of federal airways, and joint military-C.A.A. research and development programs.

New Hearings Scheduled In Class Rate Case

The Interstate Commerce Commission has set January 24 as the date for further hearings in the Class Rate Investigation case (No. 28300). These hearings will be upon a petition filed last October by the ocean carriers, and will have to do with the reasonableness and lawfulness of ocean-rail, rail-ocean, and rail-ocean-rail class rates between eastern seaboard territory and Southwestern and Southern territories. They will be held in Washington, D.C., before Examiners Myron Witters and Marion L. Boat.

D.T.A. Will Be Unchanged In New Production Set-Up

The Defense Transport Administration will continue to administer the functions it now performs and there will be no changes in the structure of the organization. This was announced January 4 by Defense Transport Administrator James K. Knudson as a result of the large number of inquiries received concerning D.T.A.'s role under the newly established Defense Production Administration (see *Railway Age* of January 8, 1951, page 47).

"The channels through which the public and industry have been dealing with the Defense Transport Administration in connection with matters in the areas of its responsibility will remain the same," the D.T.A. statement said. It added that because of increasing demands being made in connection with material, manpower and equipment shortages, the D.T.A. has taken steps "to increase the availability of personnel to handle the increased work-load."

Copper for Non-Defense Uses to Be Cut Further

A further cut in the use of copper for non-defense purposes, effective March 1, has been ordered by the National Production Authority. This latest order was issued December 30, 1950, as amendment No. 1 to Order M-12. It lists a wide range of products in which no form of copper may be used after March 1.

"Previous N.P.A. actions designed to effect savings in the use of copper

prior to March 1, remain in force," the N.P.A. said in announcing the new cut. During January and February manufacturers are permitted to use 85 per cent of the average monthly amount of brass mill and wire mill products used during the first six months of 1950, while copper in foundry products may be used at the same quarterly rate as during the first six months of 1950.

The new order permits the use of copper "where it serves a functional purpose and where no practical substitute is available," the N.P.A. said. "It will not be used where it is nonfunctional—in the manufacture of ornaments or for use in decorative parts, for instance—or where a satisfactory substitute can be used."

N.P.A. Administrator William H. Harrison said that while the order prohibits the use of copper in certain less essential items, it does not forbid the manufacture of the article itself. In many cases manufacturers will be able to use substitute materials, he said. He noted that manufacturers will be permitted to complete and sell affected items if they are in the process of manufacture on or before March 1 and will be completed not later than April 30.

ORGANIZATIONS

The **Northwest Shippers Advisory Board** will hold its 28th annual, and 95th regular, meeting, in St. Paul, Minn., on January 22.

The **Southwest Shippers Advisory Board** will hold meetings on January 23, 24 and 25 at the Washington-Youree Hotel, Shreveport, La. The l.c.l. transportation committee will meet on January 23; the executive and joint loss and damage committee will meet on January 24; and the regular board meeting will convene January 25. The **Traffic & Transportation Club** of Shreveport will hold its annual dinner dance and installation of officers on January 24, and members of the board are invited to attend. The principal luncheon speaker on January 25 will be W. N. Deramus, chairman of the board and president of the Kansas City Southern, with the **Kiwanis Club** of Shreveport as hosts.

The annual meeting of the **Winston-Salem Traffic Club** will be held on January 17 at the Robert E. Lee Hotel, Winston-Salem, N. C. Defense Transport Administrator James K. Knudson will be the guest speaker.

If the Illinois Central Railroad—100 years old next month—had come a generation earlier it might have averted the Civil war, members of the **American Historical Association** were told at a luncheon meeting at

Chicago on December 30. Robert M. Sutton, history instructor at the University of Illinois, pointed out as "interesting speculation" how commerce might have unified and held the North and South together, and have advanced Southern industry more closely in step with that of the North.

C. B. Cook, vice-president and export sales manager of the Elwell-Parker Electric Company, Cleveland, Ohio, has been elected president of the **Electric Industrial Truck Association** for the year 1951 and Elmer F. Twyman, vice-president in charge of the Philadelphia, Pa., division of the Yale & Towne Manufacturing Co., has been elected vice-president. William Van C. Brandt of Philadelphia, the association's managing director, has been re-elected secretary and treasurer.

"Foreign Trade Night" will be the theme of the January 18 open research meeting of the **Women's Traffic Club of San Francisco** at the Colonial Manor Restaurant, 20 O'Farrell street, San Francisco. James Campbell, superintendent of the Foreign Trade zone, and Paul A. Ahern, deputy collector of the zone, will speak on foreign trade zones in general. Betty Pearson, Owens-Illinois Glass Company, will be chairman for the evening.

W. R. Rhodes, general eastern passenger agent of the Chesapeake & Ohio, at New York, was elected president of the **General Eastern Passenger Agents Association of New York,** at its 29th annual meeting, held on January 4. Other officers elected were: Vice-president, F. M. Schnell, general agent, passenger department, Great Northern; treasurer, George Palma, general eastern passenger agent, St. Louis-San Francisco; secretary, A. E. Spette, assistant general passenger agent, New York, New Haven & Hartford, and assistant secretary, M. R. Kielgas, general eastern passenger agent, Chicago & North Western.

SUPPLY TRADE

Robert J. Heggie, formerly assistant manager of sales of **A. M. Castle & Co.,** has been appointed general manager of sales, succeeding **Earl E. Bates,** who has retired.

Charles G. Cooper, formerly manager of the Washington, D. C., office of the **Cooper-Bessemer Corporation,** has been elected a vice-president.

F. B. Harrison, Jr., has been appointed manager of western railway sales of the **United States Rubber Company** to succeed **E. D. Meade,** whose appointment as district sales manager of the Chicago branch was reported in the November 25, 1950, *Railway Age.* Mr. Harrison joined

John M. Yahres, who has been elected president of the Pittsburgh Screw & Bolt Corp., succeeding the late John P. Hoelzel. Mr. Yahres joined the organization in 1909, and was elected vice-president in 1921 and executive vice-president in 1937, holding the latter position until his election as president

U.S. Rubber in 1939 as a clerk in the mechanical goods division of the Chicago branch. From 1941 to 1945 he held various positions in the sales and production division at the company's Passaic, N. J., factory, returning to Chicago in 1945 as sales representative. Since 1947 Mr. Harrison has been responsible for sales of all mechanical rubber goods to major oil companies in the Chicago area.

Franklin S. Harris, manager of the Seymour, Conn., plant of the **Kerite Company** since 1947, has been appointed a vice-president. Mr. Harris joined Kerite in 1946 as assistant to the vice-president and before that was associated with Lever Brothers and the Travelers Insurance Company.

EQUIPMENT AND SUPPLIES

PASSENGER CARS

Five Dome Cars Ordered for "Eagles"

Five planetarium-dome cars—four for the Missouri Pacific and one for the Texas & Pacific—have been ordered from the Pullman-Standard Car Manufacturing Company. Four of the cars are for service in the "Texas Eagles" between St. Louis, Mo., and Dallas, Tex.-Fort Worth and between St. Louis and San Antonio, Tex. The fifth car will operate between St. Louis and Kansas City, Mo., and Omaha, Neb., in the "Missouri River Eagle."

FINANCIAL

Alleghany May Offer Loan To Missouri Pacific

Charles Shipman, assistant to the vice-chairman of the Alleghany Corporation, is reported to have told the Financial Analysts of Philadelphia, Pa., on January 4 that his company would make to the trustees of the Missouri Pacific, on or about January 15, an offer which, if accepted, would "automatically kill" the Interstate Commerce Commission reorganization plan on which holders of M. P. securities are now voting.

Alleghany, Mr. Shipman was quoted as saying, would offer to put up $20,000,000 to pay off the inter-company debt of the New Orleans, Texas & Mexico to the M. P. In return, Alleghany would receive as security 5 per cent junior secured debenture bonds of the M. P. The Alleghany plan, according to Mr. Shipman, would offer security holders of the M. P. and its subsidiaries more than the I.C.C. plan.

Alleghany, which has a large common stock interest in the M. P., has been one of the principal opponents of the I.C.C. reorganization plan, and has publicly urged other security holders to oppose the plan, in recent advertisements.

Nickel Plate to Offer Stock to Present Holders

In what is believed to be the first new stock financing of any substantial size by any major railroad since at least 1936, the New York, Chicago & St. Louis, subject to Interstate Commerce Commission approval, plans to ask $150 per share for the 33,770 shares of new common stock which it is offering to its present stockholders on the basis of one new share for each 10 shares now held. (See *Railway* Age of December 16, 1950, page 66.)

According to a January 4 announcement by L. L. White, president and chairman of the board of the Nickel Plate, subscription warrants were sent to holders of record January 11, and will expire at the close of business on January 30. Money obtained from sale of the new stock, Mr. White said, would be used to reimburse the road's treasury for funds taken from it for new equipment and other improvements.

Sees Defeat of M.P. Reorganization Plan

Confidence that the Missouri Pacific Railroad reorganization plan (see *Railway Age*, November 11, 1950, page 103), would be defeated in balloting now in progress was expressed by T. C. Davis, chairman of the board of the road, in a statement issued on January 9. Voting on the plan ends January 15.

Mr. Davis's statement follows:

"The balloting on the Missouri Pacific reorganization plan is drawing to a close and thousands of bondholders are voting 'reject.' Furthermore, revocations of early 'accepts' are pouring into the Interstate Commerce Commission. It is evident that American security holders, when presented with the facts of solvency, will not be deceived by prejudiced advice.

"Even though the trustee paid out more than $11,000,000 to first and refunding bondholders in December, cash of the Missouri Pacific at the year end closely approximated $80,000,000. In addition, the N.O.T. & M. and I.-G.N. together held about $19,000,000 of cash and equivalent. Likewise, the 75 per cent-owned Texas & Pacific Railway Company had nearly $19,000,000 of cash and equivalent.

"It has been announced that the syndicate to raise $20,000,000 cash for funding the claim of the Missouri Pacific against the N.O.T. & M. has been completed. This cash will shortly be offered the trustee of the Missouri Pacific and, when accepted, will cause a further substantial increase in the cash held by and for the Missouri Pacific Railroad Company.

"The proceedings under Section 77 of the Bankruptcy Act have been long and tenuous. The result of the balloting will probably not be known until about April 1. Furthermore, there are some twelve separate appeals from the plan yet to be heard by the higher courts.

"There seems to be no good reason for the trustees to continue to build up great sums of cash while interest accumulates on high coupon bonds. Our board has consistently advocated a policy of debt retirement and, several times, filed petitions with the court to effectuate such policy.

"As chairman, I expect shortly to ask the board of directors for authority to seek the use of a substantial portion of idle cash for the purchase for retirement of first and refunding bonds of the Missouri Pacific, such purchases to be made at not in excess of call price plus accumulations.

"If we protect our tax base, large cash surpluses will continue and these should be used for the persistent retirement of senior debt. This policy should also apply to the N.O.T. & M. and particularly to the International-Great Northern 1st mortgage bonds, which are selling far below their worth.

"There should be an end to the retention of huge pools of cash while interest accumulations at high rates continue to pile up. It is time for all to adopt a constructive attitude and recognize the solvency of these properties, instead of clinging to fatuous technicalities."

Central of Georgia.—*Control of Savannah & Atlanta.*—This road has amended its pending application for authority to acquire control of the S.&A. by asking the I.C.C. to approve a change in plans for financing the transaction. The road originally planned to issue a note to the Reconstruction Finance Corporation for $2,500,000, and pay the balance of the purchase price, $1,000,000, from cash on hand. It now seeks permission to withdraw the application for the R.F.C. loan.

Instead, the road would pay $2,000,000 from cash on hand and would issue a note to the Citizens & Southern National Bank for the remaining $1,500,000. The latter note would bear interest at 4 per cent and would mature in 10 years.

As noted in *Railway Age* of November 4, page 94, I.C.C. Examiner Paul C. Albus has recommended that the commission deny the C. of Ga.'s application for authority to acquire control of the S.&A. The Central seeks to acquire this control through its subsidiary, Empire Land Company, which would purchase stock control of S.&A.'s parent company, the Port Wentworth Corporation.

Chicago, Rock Island & Pacific-Ft. Worth & Denver City.—*Lease of Burlington-Rock Island.* — These roads have applied to the I.C.C. for authority to lease jointly the B.-R.I. lines in Texas. The two roads have leased the latter property since 1931, but the present lease will expire June 1, 1951. The new agreement would be a continuation, "in all substantial respects," of the former one. It would be dated as of January 1, 1951, with a term of 99 years. The B.-R.I. lines include approximately 211.7 miles between Waxahachie, Tex., and Houston, plus trackage rights over the Gulf, Colorado & Santa Fe between Houston and Galveston, and a lease of the Galveston Terminal Company.

New Securities

Application has been filed with the I.C.C. by:

SEABOARD AIR LINE.—To assume liability for $4,920,000 of series I equipment trust certificates, to finance in part 1,225 new freight cars costing an estimated $6,587,646.

	Description and Builder	Estimated Unit Cost
500	50-ton all-steel box cars (Pullman-Standard Car Manufacturing Company)	$ 5,077
200	70-ton covered hopper cement cars (Pullman-Standard)	6,247
100	70-ton covered hopper phosphate cars (Pullman-Standard)	6,788
200	50-ton high-side gondola cars (Bethlehem Steel Company)	4,653
200	50-ton low-side gondola cars (Bethlehem)	4,477
25	Caboose cars (International Railway Car & Equipment Manufacturing Co.)	10,640

The certificates would be dated February 1, 1951, and would mature in 15 annual installments of $328,000 each, beginning February 1, 1952. They would be sold by competitive bids, with the interest rate to be set by such bids.

Dividends Declared

Ann Arbor.—common, 50¢; preferred, $5, both payable December 28, 1950, to holders of record December 26, 1950.

Cleveland, Cincinnati, Chicago & St. Louis.—common, $5, semiannual; 5% preferred, $1.25, quarterly, both payable January 31 to holders of record January 12.

Saratoga & Schenectady.—$2.50, semiannual, payable January 15 to holders of record January 12.

Security Price Averages

	Jan. 8	Last Week	Last Year
Average price of 20 representative railway stocks	55.79	56.07	42.44
Average price of 20 representative railway bonds	98.55	98.69	91.44

RAILWAY OFFICERS

EXECUTIVE

A. N. Whitlock, vice-president and general counsel of the CHICAGO, MILWAUKEE, ST. PAUL & PACIFIC, with headquarters at Chicago, has retired from the latter position, but will continue to serve as vice-president.

As reported in the *Railway Age* of December 16, 1950, **Carlos J. McDonald,** assistant to the president of the SOUTHERN PACIFIC, has retired, and has been succeeded by **L. B. Young,** former vice-president and general manager of the PACIFIC MOTOR TRUCKING COMPANY, a subsidiary of the railroad. A native of Monterey, Cal., Mr. McDonald began his railroad career at Houston, Tex., on the S. P. Lines in Texas & Louisiana. He was appointed assistant superintendent of transportation at San Francisco, Cal., in 1914, and during the period of federal control became assistant to the district director. Later he served as manager of perishable freight traffic and as mail and express traffic manager. Since coming to the executive department of the S. P. in 1943, he has been assistant to the president and also president of several of the road's subsidiaries, including the Pacific Motor Trucking Company and the Southern Pacific Land Company. In addition, Mr. McDonald has had general supervision over the real estate department and mail and express services. Mr. Young succeeds him in all these capacities.

Mr. Young began railroading as a telegraph operator. He joined the S. P. in 1908 at San Francisco, and later served with the road's East Bay Electric Lines, handled labor relations matters in the general manager's office, acted as chief clerk to the assistant general manager at Los Angeles,

L. B. Young

Cal., and spent several years in the road's Bureau of Transportation Research. Mr. Young served with the Pacific Electric at Los Angeles for two years, and in 1928 participated in founding the Pacific Motor Trucking Company, of which he became vice-president and general manager in 1933.

FINANCIAL, LEGAL & ACCOUNTING

Griffin B. Bell, attorney of the CENTRAL OF GEORGIA, has been appointed to the new post of commerce counsel at Savannah, Ga.

Thomas H. McGuire, general attorney of the CHICAGO, MILWAUKEE, ST. PAUL & PACIFIC at Seattle, Wash., has been appointed general attorney and commerce counsel at Chicago, suceeding **Carson L. Taylor,** whose election as general solicitor was announced in the December 23, 1950, *Railway Age*. **B. E. Lutterman,** assistant general attorney at Seattle, succeeds Mr. Maguire. **W. L. Hunter,** assistant general solicitor, has been appointed general attorney, and **R. K. Merrill,** assistant general attorney, becomes assistant general solicitor, with headquarters as before at Chicago. These changes were occasioned by the recent retirement of **A. N. Whitlock,** as general counsel, and the appointment as his successor (reported in the December 23, 1950, *Railway Age*) of **M. L. Bluhm,** former general solicitor.

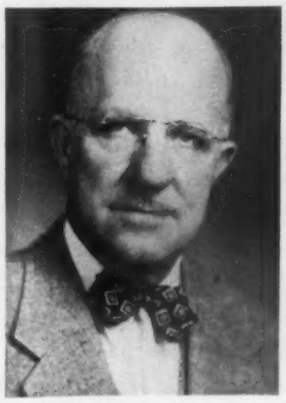
E. T. Amis, assistant to auditor of disbursements of the SEABOARD AIR LINE, has been appointed auditor of disbursements, with headquarters as before at Portsmouth, Va., succeeding **C. W. Powell,** who has been promoted

to assistant comptroller at Portsmouth. Mr. Amis was born at Louisville, Ky., and joined the S.A.L. in July, 1919, as a statistical clerk in the president's office at Norfolk, Va. Transferring to the accounting department in July, 1922, he served as statistician in the office of the auditor of stores and cost accounts at Portsmouth. Five months later he transferred to the office of the auditor of disbursements and held various positions in that office. Mr. Amis was appointed division auditor at Hamlet, N. C., in November, 1942, transferring to Savannah, Ga., in February, 1944. In March, 1945, he became assistant to auditor of disbursements.

Mr. Powell was born at Portsmouth and entered the service of the S.A.L. in that city in 1912 as a clerk in the office of the auditor of passenger accounts. He held various other posts in the accounting department until October, 1924, when he became division auditor at Charleston, S. C., transferring to Raleigh, N. C., in December, 1925. Mr. Powell was appointed traveling auditor of disbursements in May, 1926, and, after other assignments in the accounting department, was appointed auditor of disbursements in October, 1934.

OPERATING

Ira W. Newman, division engineer of the LOUISVILLE & NASHVILLE at Latonia, Ky., has been promoted to superintendent of the Cincinnati division, succeeding **A. M. Stevenson,** who has retired. **J. T. Alexander,** trainmaster



Ira W. Newman

at Boyles, Ala., has been appointed assistant superintendent, Cincinnati division, succeeding **T. A. McDonald,** who is being relieved at his own request. **Emmett E. Sullivan,** trainmaster at Mobile, Ala., has become assistant superintendent, Montgomery, New Orleans and Pensacola division. **John W. Lovell,** terminal trainmaster at New Orleans, La., succeeds Mr. Sullivan, and is in turn succeeded by **C. B. Matthews,** assistant trainmaster at Pensacola, Fla. Mr. Newman is a native of Louisville, Ky., and studied civil engineering at Rose Polytechnic Institute. In 1919 he was employed by the L. & N. as a clerk in the auditor of disbursements' office at Louisville, and in 1920 was made a draftsman in the chief engineer's office, later serving as assistant engineer in that office and on the Cincinnati division. He was furloughed in August, 1941, to accept a position in connection with engineering work on the U. S. Army's Camp Breckinridge at Morganfield, Ky., returning to the L. & N. in January, 1942, as assistant engineer. He was advanced to assistant division engineer at Latonia in May, 1943, and to division engineer, Eastern Kentucky division, in February, 1945. Mr. Newman was transferred in the same capacity to the Cincinnati division, with headquarters at Latonia, in July, 1947.

Mr. Stevenson was born in Christian County, Ky., on January 19, 1881. He joined the L. & N. in March, 1903, as an agent at Gracey, Ky., on the now-abandoned Clarksville and Princeton branch. Following service as agent-and operator on the Memphis line and as ticket agent at Russellville, Ky., he was appointed chief clerk in the trainmaster's office on the Eastern Kentucky division in 1918. Subsequently he served as train dispatcher, traveling auditor out of Louisville, trainmaster on the old O. & N. division and as in-

spector of transportation at Louisville. In 1929 he became assistant superintendent of the Pensacola division, and later the same year was advanced to superintendent of the old Owensboro division, with headquarters at Owensboro, Ky. In 1931, following the consolidation of certain of the L. & N.'s operating divisions, Mr. Stevenson came to the Louisville division as assistant superintendent. He was appointed superintendent of the Cincinnati division in August, 1937.

F. E. Horning, superintendent of the Washington, D. C., division of the RAILWAY EXPRESS AGENCY, has been appointed superintendent of organization at New York. **C. L. Daniel,** supervisor of organization at Atlanta, Ga., succeeds Mr. Horning as superintendent of the Washington division.

James F. Nellis, superintendent of the WABASH at St. Louis, Mo., has been appointed acting superintendent of the Decatur division, with headquarters at Decatur, Ill. Succeeding Mr. Nellis is **Leonard K. Brown,** trainmaster at Moberly, Mo. **E. W. Nixon,** trainmaster on the Decatur division, at Decatur, has been advanced to superintendent of the Chicago Terminal division, with headquarters at Chicago, to succeed the late **Charles H. Keller,** whose death was reported in the December 23, 1950, *Railway Age*.

F. W. Bellinger, general superintendent of the BUTTE, ANACONDA & PACIFIC, has been appointed general manager, with headquarters as before at Anaconda, Mont., succeeding **R. E. Brooks,** who retired on January 1, after more than 51 years of continuous railroad service.

TRAFFIC

Otto H. Grimm, New England freight agent of the NEW YORK CENTRAL SYSTEM at Boston, Mass., has been appointed general eastern freight agent at New York. **Stanley A. R. Lancto,** division freight agent at New York, succeeds Mr. Grimm at Boston.

John S. McEldowney, Jr., formerly chief clerk in the freight traffic department of the ATCHISON, TOPEKA & SANTA FE at Dallas, Tex., has been appointed assistant to the freight traffic manager at Galveston, Tex.

L. E. Ward, Jr., assistant industrial and agricultural manager of the NORFOLK & WESTERN, has been appointed industrial and agricultural manager, with headquarters as before at Roanoke, Va., succeeding **T. Gilbert Wood,** who has been appointed consultant in industrial development, a new position.

L. R. Everett, western general passenger agent of the ATCHISON, TOPEKA & SANTA FE, with headquarters at San Francisco, Cal., has retired. Mr. Everett was born on November 1, 1884, at Ouray, Colo., and attended high school at Los Angeles, Cal. Starting his rail-

road career in 1901 as a clerk in the Santa Fe's freight traffic department at Los Angeles, he later served as rate clerk until 1906, when he became traveling agent at Santa Barbara, Cal. Three years later he was made city passenger agent at San Francisco, returning to Santa Barbara as general agent in 1914. From 1924 to 1927 he served as district freight and passenger agent at San Bernardino, Cal., subsequently being appointed assistant general passenger agent at San Francisco. In 1946 he became western general passenger agent at that point.

PURCHASES & STORES

As reported in the *Railway Age* of January 8, **John L. Timanus** has been appointed secretary of the PURCHASES AND STORES DIVISION of the ASSOCIATION OF AMERICAN RAILROADS at Washington, D. C. Mr. Timanus joined the A.A.R. in 1942 as a general clerk in the P.&S. Division and served subsequently as assistant chief clerk and chief clerk. Prior to coming to

John L. Timanus

the A.A.R., Mr. Timanus was secretary to the general purchasing agent of the Western Maryland in Baltimore, Md. He was in the army in World War II, first in the infantry and later in the medical corps in France. Born in Baltimore in 1908, Mr. Timanus attended high school there and later studied at John Hopkins University and Maryland Institute.

ENGINEERING & SIGNALING

M. C. Bitner, assistant to chief engineer of the PENNSYLVANIA, has been appointed engineer, maintenance of way, Western region, with headquarters at Chicago.

Frederick H. Boulton, assistant division engineer, Evansville division, of the LOUISVILLE & NASHVILLE, at Evansville, Ind., has been advanced to division engineer, Cincinnati division. He is succeeded by **Marow W. Cox,** assistant engineer water supply at Louisville, Ky., who is in turn succeeded by **John H. Upham,** assistant engineer, miscellaneous department, chief engineer's office. **Eugene R. Englert,** assistant engineer, Louisville division, at Louisville, has been appointed as Mr. Upham's successor. **Nicholas C. Kieffer,** draftsman in the chief engineer's office, succeeds Mr. Englert.

Rush A. Kelso, assistant division engineer of the SOUTHERN, has been promoted to division engineer, with headquarters as before at Atlanta, Ga.

OBITUARY

William J. Wilkins, vice-president of the SOUTHERN SYSTEM and resident executive officer at Cincinnati, Ohio, died on December 30, 1950, in a Cincinnati hospital after a heart attack suffered three days previously at his home in that city. He was 52 years old.

John D. Fraine, who retired in 1946 as superintendent of the CANADIAN PACIFIC at Kenora, Ont., died recently at Vancouver, B. C., at the age of 70.

Current Publications

PERIODICAL ARTICLE

Nineteenth Century Railroad Entrepreneurs by Prof. Thomas C. Cochran. Explorations in Entrepreneurial History, October 15, 1950, pp. 1-23. Published by the Research Center in Entrepreneurial History, Harvard University, Cambridge 38, Mass.

This article is drawn from material collected by Professor Cochran for a forthcoming book on the beliefs, attitudes and opinions of nineteenth century railroad entrepreneurs, as expressed in their business correspondence. Subjects covered are competition and cooperation, virtues and defects of competition, types of competition, controlling competition, cooperation, rate agreements, and competitive monopolists. In a 4-page appendix are listed the names of the individuals whose correspondence is cited in the article.

TRADE PUBLICATION

Plus Factors For Passenger Car Heating. 58 pages. Published by the Vapor Heating Corporation, Railway Exchange bldg., Chicago 4. Free.

A "photoscript" taken from a sound film illustrating and describing the requirements of a railroad passenger car heating system; the Vapor approach employed to meet these requirements; the simple basic Vapor Systems that may be used; and the Vapor system of zoning that provides temperature control in various locations of the car. Suggestions are advanced for modernizing older passenger cars, together with descriptions of some Vapor innovations that add extra comfort factors and refinement of control to a passenger car heating system.

BOOKS

Illinois Central Railroad Centennial Bibliography, 1851-1951. 239 pages. Compiled by Helen R. Richardson. Published by the Bureau of Railway Economics Library, Association of American Railroads, Washington, D. C. Available free upon request from the Illinois Central, 135 E. Eleventh pl., Chicago 5.

A bibliography of all known I.C. reference material in various libraries throughout the United States, designed for those who may have occasion to seek source material about the I.C.

Mileposts on the Prairie; The Story of the Minneapolis & St. Louis Railway, by Frank P. Donovan, Jr. 310 pages, illustrations, end paper maps. Published by Simmons-Boardman Publishing Corporation, 30 Church st., New York 7. $4.50.

Reviewed in *Railway Age* of December 16, 1950, page 49.

The Elements of Transportation Economics, by G. Lloyd Wilson. 178 pages, charts. Published by Simmons-Boardman Publishing Corporation, 30 Church st., New York 7. $3.75.

This is a simplified introduction to fundamental principles of transportation economics. Transportation's all-important role in production, manufacture, distribution, and consumption of commodities is described, and an extensive bibliography concludes each chapter. The applications of transportation economics are made clear by frequent references to easily understood examples from real life. A chapter on railroads explains their ownership and management, their patterns of organization, and the functions of their chief executives. The work of the traffic, accounting, purchasing, stores, insurance, law, real estate, tax and personnel departments is also explained.

1950 Bituminous Coal Annual. 200 pages, illustrations, charts, graphs. Published by the Bituminous Coal Institute, Southern bldg., Washington 5, D. C. Free.

This handbook of the bituminous coal industry contains statistics and other data on energy sources, reserves, production, transportation, markets, labor, safety, research, combustion, chemistry and finance.

PAMPHLETS

Scrap? Ready! Published by the Institute of Scrap Iron & Steel, Inc., 1346 Connecticut Ave., N.W., Washington 6, D. C. Free.

Portrays the functions of the scrap iron and steel industry, with emphasis on the demands of defense and military preparedness. By pointing to the fact that scrap is currently flowing into furnaces and cupolas at a rate of nearly 2,500,000 gross tons monthly — surpassing the records of World War II — the pamphlet points up its contention that "Scrap is ready—and already on the job."

The Case of the Vanishing Passenger Local, by W. G. Whitsett, assistant to vice-president — traffic, Louisville & Nashville. Reprinted from the L.&N. Employees Magazine of October, 1950. Available from the editor, T. E. Owen.

"Why don't the railroads try to get back the local passenger business?" In answering this commonly asked question, Mr. Whitsett points out that the local passenger train has been outmoded by private and public passenger transport on the highways and that in most instances, only "misdirected civic pride" prevents such service from being discontinued. "We are battling to save the passenger service," Mr. Whitsett concludes, "and the sooner we can get these local trains out of service, the better chance we have of building up our through trains, and accomplishing our goal."

Impact. 57 pages. Published by the Norfolk & Western Railway, Roanoke, Va. Free.

A well-written amusingly illustrated, peppy little sales promotion booklet distributed to N.&W. employees, advising why and how they should sell N.&W. service.

In Brief . . . Shorts from America's Trucking Industry. 16 pages. Published by American Trucking Associations, Inc., 1424 Sixteenth st., N.W., Washington 6, D. C. Free.

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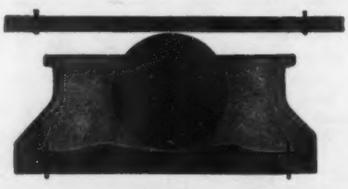

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